AN INVESTIGATION OF GENDER COMPOSITION, PAY RATES, AND EVALUATOR GENDER ON JOB EVALUATION RATINGS.

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CONTENTS

LIST OF TABLES

ABSTRACT

The present study investigated the extent that job evaluation ratings were influenced by the gender composition of a job, the pay level associated with a position, and the gender of the evaluator.

The sample consisted of 60 male and 60 female personnel practitioners who rated four job descriptions on three factors; complexity, education and experience.

Little evidence was obtained to support the assumption that gender composition influenced the evaluation of job worth. By contrast, the pay level associated with a job, consistently influenced job evaluations. Finally, results provided strong support that evaluator gender affected ratings, whereby females rated jobs higher than males did.

Results are discussed in terms of job evaluation as an effective mechanism for addressing the issue of equal pay for work of equal value.

CHAPTER I

INTRODUCTION

New Zealand was an early pioneer in the fight for equality for women.

> *"History tells the story of a long, frustrating and at times exciting struggle for equal pay, which began with the demands of suffragettes in the 1890's, and of women's organisations in the 1900's" (Corner, 1988, p. 9).*

However, different rates of pay for men and women remained normal in awards and agreements in many industries until the passing of the Equal Pay Act of 1972. This legislation implemented the principle of equal pay in the private sector, a principle which had previously been introduced in the public sector in the Government Service Equal Pay Act of 1961. In New Zealand, the 1972 Act has meant some narrowing of the pay gap, although the extent of the difference remains a cause for concern.

The gap results mainly from the clustering of women in female dominated occupations which have traditionally been undervalued, and from women not being represented at all levels in the workforce (Hyman, 1986). The extent to which occupational segregation affects pay levels, particularly in female-dominated areas, however is difficult to document.

Equal pay then, is again an issue on the political and industrial relations scene. Renewed interest in the topic has been based largely on the view that equal pay between men and women still remains to be realised. Despite legislation guaranteeing equal pay for equal work, the data unequivocally supports the existence of differentials in pay between men and women.

Equal pay for equal work requires the same remuneration for men and women only when jobs are identical. The issue has now progressed to one of equal pay for work of equal value, i.e, extending the principle to jobs requiring similar levels of training, skill, effort and responsibility with similar working conditions. The main thrust of the equal pay for work of equal value campaign, (sometimes known as the comparable worth issue) in New Zealand is for new or amended legislation to deal with the vacuum left by the Arbitration Court decision in the 1986 Clerical Workers Case (Hyman, 1987). The significance of this case is discussed in more detail in the subsequent literature review.

On November 8th 1989, the Government confirmed its intention to legislate, and provide a framework within which the problems of inequity could be addressed. The Employment Equity Bill introduced to Parliament in late 1989 came into force on 15 July 1990. The Act required that all state employers and private sector employers with more than 500 staff, set up equal opportunity programmes, and provide mechanisms to groups to request an employment equity assessment.

It was also proposed that traditionally female occupations must become higher paying, relative to male dominated occupations, thus incorporating the concept of equal pay for work of equal value.

Comparable worth (or equal pay for work of equal value) broadens the earlier policy of equal pay for equal work which prohibited wage discrimination if men and women were doing the same or essentially similar work. Instead, it refers to the notion that the relative worth of disparate jobs should be measured by evaluation methods that more objectively rate differences in skill, effort, responsibility and working conditions. Although not unambiguously defined, comparable worth is a compensation idea which essentially recognizes that jobs can be measured in terms of job worth, and paid accordingly (Schwab and Wichern, 1983).

The arguments in favour of equal pay for work of equal value are essentially ones of equity. The major counter-arguements are based on expense and on the principle that supply and demand should determine wage levels. On one side, it is claimed that every job is priced fairly, consistent with labour market conditions and regional disparities. On the other hand, proponents of comparable worth believe that the labour market is so distorted and discriminatory, that a perfect market for labour and payment cannot operate. They argue that the historical male-female earnings gap is primarily attributable to discriminatory influences in current wage setting practices.

Comparable worth then remains an issue of great controversy. Women's groups, unions and other proponents hold that work of equal value should be paid for at the same rate. Meanwhile opponents hold up the principles of the free market, and claim that implementation of such a policy would be too costly. As the debate continues, one is faced with the difficult task of putting principles into practice in the workplace. It is necessary to ensure that processes implementing the principle of equal value be carefully thought out and developed. Clearly implementation of comparable worth would require as one ingredient, an effective and fair system of job evaluation.

> *"Job evaluation is a method of comparing jobs by use of formal and systematic procedures in order to establish a rank order of jobs ... and thus provide the basis for an equitable pay system" (Elizur, 1980, p. 2).*

This broad definition encompasses all approaches, from simple whole job ranking to the more sophisticated points-rating schemes.

In general terms, job evaluation requires that an assessment must be made of the factors which appear to be a legitimate basis of pay differences among a set of jobs. Each job needs to be scaled on each of the various factors to give it a combined total score. This total score represents its summary "worth".

Traditional job evaluation methods have only achieved improved or relative objectivity in compensation. Because job evaluation is inherently subjective, requiring human judgement in the process, it must be used with caution to help to achieve pay equity. The most carefully constructed methods of job analysis and evaluation can lead to a biased outcome if concepts of equity and fairness are not applied in the design, implementation and administration of the plan.

After being commissioned by the United States Equal Employment Opportunities Commission, the National Academy of Science in its interim (Treiman, 1979) and final report (Treiman and Hartmann, 1981) concluded that job evaluation may serve as a source of discrimination in establishing pay differentials among jobs held predominantly by females compared to those held predominantly by males.

This study will assess the extent to which three forms of bias operate in a job evaluation system. The first occurs where jobs, held predominantly by females, are judgementally undervalued relative to predominantly male jobs with the same job content. Second, indirect bias occurs where job evaluation judgements are influenced by knowledge of discriminatory wages. The final form of bias investigated, is where evaluator gender influences job evaluation ratings.

The subsequent thesis is divided into five chapters. Chapter One represents the introduction. Chapter Two presents a review of the literature surrounding the topic of potential gender biases in job evaluation, and the proposed reasons for the male-female wage gap. The third chapter consists of a rationale for the study, and outlines the method. Chapter Four presents the results of the study. Chapter Five presents the discussion and final conclusions, in terms of this study and previous research findings.

Finally, two technical points require mention. Firstly, through-out the subsequent study, and particularly in reviewing the literature, where a difference in earnings is discussed, the term refers to mean differences in earnings for groups in different jobs.

Secondly the term gender will be used through-out this study to denote, or refer to the particular sex of an individual.

CHAPTER II

REVIEW OF THE LITERATURE

The following chapter will present a literature review surrounding the topic of equal pay for work of equal value. It initially discusses the extent of the earnings gap in New Zealand, and the reasons offered in explanation of this. Two major theories; the human capital theory, and the theory of labour market segmentation are discussed, and critiqued in terms of the extent that they each explain the wage gap between males and females.

The chapter then provides a brief survey, of the overseas legislation and attempts to implement the principle of pay equity, and of the current situation in New Zealand. The chapter concludes with a section on job evaluation, and the arguements associated with deriving an objective evaluation system. Finally, particular detail is given to the notion that sex role stereotypes may influence the evaluation of jobs.

2.1 MALE-FEMALE WAGE GAP

Despite legislation, affirmative action and other equal employment opportunity efforts, the male-female wage gap persists, due to apparent complex and inter-related factors.

Hyman and Clark (1987) elucidate that the result is therefore, compounded by difficulties of definition, and a lack of consensus over what elements of the pay gap are justifiable or unjustifiable. The reasons then, behind the gender differentials in occupational distribution and earnings have been subject to considerable debate. Despite this disagreement over the nature of the factors involved, it is generally agreed that women as a group, through-out the industrialised world earn substantially less than men (Treiman and Hartmann, 1981).

The male-female earnings gap in New Zealand is larger than its Australian counterpart, but below that in the United States, and similar to that in the United Kingdom. During the early 1970's, Australian women increased their average weekly earnings form about 60% to 77% of that of men. Recent experience in the United Kingdom has been similar, with the wage gap narrowing 14.8% between 1970 and 1980, while in the United States there has been little change (Gregory and Ho, 1985). In New Zealand, the male-female earning ratio narrowed six or seven percentage points from 72% to78% between 1973 and 1977 (Hyman, 1988).

However, since 1977 there has been no further improvement in narrowing the pay gap (Hyman, November, 1986). In spite of the Equal Pay Act of 1972, the Statistics Department's December 1989 figures showed that women earned on average $120.00 a week less than men, $417.06 compared with men's $537.84 per week.

In May 1990, women's average ordinary-time hourly earnings were 80% of that of men's (Department of Statistics, 1990).

Overseas, a number of studies have attempted to identify the extent to which various productivity related factors contribute to the earnings gap. Much of the research has been done in the United States, leaving it unclear as to the extent that the pattern of gender differences in pay reflect historical factors within the United States, and to what extent such differences reflect features of other industrialised nations.

However, it is not surprising that the results of many studies are conflicting, inconclusive and often partially dependent on the viewpoint of the author (Hyman, 1981). It is therefore partly a matter of individual attitude as to what extent the pay gap is considered unreasonably discriminatory.

> *"Different levels of skill, training, experience, and responsibility are accepted by most people as reasonable grounds for pay differences, while supply and demand factors have some ... bearing on pay levels" (Hyman , 1985 p. 16).*

Two major theories have been advanced to explain wage differentials by gender. One asserts that most of, or all of the difference between male and female earnings are attributable to gender differences in worker and job characteristics.

This view is based on the assumption that people make choices to invest in training with the aim of maximising life time earnings. Most of the research in this area is based on the human capital model which derives from the neoclassical economic theory of wages. Human capital theory proposes that workers are paid according to the value of their economic contribution, and therefore wage differentials exist because of true differences in qualifications. As a result women earn less because of their lower investment in productivity enhancing factors, such as, training and qualifications.

A second approach to explaining the male-female earnings differential is the theory of labour market segmentation. According to this institutional view, jobs requiring similar skills, training, and responsibility with similar work conditions may be paid quite differently because of habit, tradition or because of gender discrimination.

The latter view emphasizes the importance of other economic, political and social institutions on the earnings differential, and argues that perfect competition does not operate in the labour market. This differs from the conventional neoclassical analysis, and stresses that rigidity and barriers act on supply and demand.

Clearly the two theories differ in the respective emphasis they put on individual choice and institutional constraints in the labour market. Both have generated some research interest.

2.1.1 Human Capital Theory

Human capital theory explains occupational and pay differences by gender in terms of worker's voluntary choices as opposed to market discrimination.

Developed by Mincer and Polachek (1974), quoted in Reskin (1984), the theory focuses on the family, because of which women can expect shorter and more discontinuous involvement in the market than men are able to achieve. Therefore, the human capital theory explains pay differences on the basis of differences between worker's personal characteristics or what Mincer and Polachek term human capital, such as education, experience, and training.

Mincer and Polachek (1978) argue that women's expectation of intermittent labour force participation is thought to affect their decision regarding education, training and occupational choice. Occupational segregation by gender arises then, as women avoid occupations requiring considerable investment in on-the-job training and occupations with high rates of depreciation for time spent out of the labour force. Women choose occupations where skills do not depreciate, the penalty for intermittency is relatively low, and entry and re-entry are easier. Similarly employers will be reluctant to promote or invest in on-the-job specific training for women workers for similar reasons.

The human capital theory therefore argues that women choose female jobs because they penalise discontinuous labour force participation less than do male jobs. Finally ,when women work they must balance the demands of work and family, and may be forced to accept lower paying jobs that are closer to home, and which have work schedules which are compatible with family responsibilities. The human capital theory implies then, that women accumulate less productivity enhancing characteristics than men and that they are more likely to choose jobs which offer non-pecuniary advantages such as flexible working hours.

The human capital account of segregation has generated considerable research, but with conflicting and inconclusive results (Corcoran and Duncan, 1979; Treiman and Hartmann, 1981; Reskin and Hartmann, 1986; Sandell and Shapiro, 1978; Mincer and Polackek, 1978; and Wittig and Lowe, 1989).

In a study, Sandell and Shapiro (1978) re-examined the evidence proposed by Mincer and Polachek (1974) in support of the human capital theory. Sandell and Shapiro concluded, that differences in work experience histories of men and women directly accounted for only about one quarter of the difference in wages between the two groups. They therefore suggested, that labour market discrimination could play a larger role in explaining the male and female wage gap than previously thought.

However, Mincer and Polachek (1978) in a similar study argued that labour force continuity was more important than indicated by Sandell and Shapiro. Mincer and Polachek also estimated that nearly half of the wage differential between men and women could be explained by work experience histories.

Corcoran and Duncan (1979), investigated the extent that differences in work history, on-the-job training, absenteeism, restricted work hours, and location accounted for the wage differences between males and females. While labour force withdrawals did reduce wages, because work experience was not being accumulated, there was no additional penalty due to depreciation of skills. Furthermore, according to Corcoran and Duncan's formula, less than half of the wage differential was due to differences in men and women's education, work experience or labour force attainment. Results from the study showed that the wage advantage benefiting men cannot be explained solely by superior qualifications or by more attachment to the labour force. This indicates that the labour market does not therefore treat workers fairly in the sense that equally productive workers are paid equally.

Treiman and Hartmann (1981), in their review of studies that focused on job characteristics, indicated that about 40% of the wage gap could be attributed to a combination of legitimate worker and job charateristics.

Furthermore they concluded, that human capital characteristics usually accounted for less than one quarter, and never more than half of the discrepency in male and female earnings.

Finally, Reskin and Hartmann (1986) propose that Polachek's human capital theory has little support. In their review, they concluded that the ability of the human capital theory to explain the earnings gap depends on determining how women make labour market decisions. They argue that a theory which expects economic optimisation does not consider the extent that a women's choice may be subject to other structural and cultural constraints.

Opponents of the human capital approach argue that factors other than productivity, such as custom, union strength, and discriminatory behaviour affect wages. It appears that, studies attempting to explain the difference in earnings between men and women on the basis of human capital factors, usually account for less than one quarter and typically never more than one half of the observed earnings differences. This clearly does not lend strong support to the human capital theory.

The human capital theory does not resolve the issue of the pay gap between men and women. Some of the remainder of the gap is attributable to patterns of behaviour by employers and employees that may reflect either discrimination or alternatively, perfectly acceptable voluntary behaviours.

In conclusion, the studies provide support that part of the earnings differential between men and women can be explained by factors unrelated to any possible discrimination by employers. However, the evidence reviewed indicates that part of the gap also remains unexplained, and may result from gender discrimination.

The human capital theory explains the wage differential in terms of women's labour market choices. This refers to supply factors, or the attributes that individuals bring to the labour market, in part developed through gender-role socialisation. Many beliefs and stereotypes surround women and their attachment to the labour force. Socialisation is a life long process continuing as an adult enters work roles, and experiences common job training with other males and females. As men and women enter the labour force and make occupational choices they are socialised to value particular job criteria (Reskin, 1984; Reskin and Hartmann, 1986). However Lacy , Bohemeier, and Shepard (1983) make the point that caution should be exercised when making generalisations about gender differences in work attitudes, so that differential work values are not used to justify gender inequalities.

Studies in this area have considered the extent of young people's aspirations and the occupations they expect to pursue. While researchers have tentatively hypothesized that differential socialisation may affect individual's occupational choices, the lack of longitudinal studies limits any conclusive links.

Overall, the evidence regarding the association between people's pre-employment occupational aspirations, and the occupation they end up in, is mixed. In sum, women's labour market opportunities are affected by the vocational education, general education and other socialisation and training influences. However the extent to which women's choices based on these factors alone, account for the wage differential is questionable.

2.1.2 Labour Market Segmentation

A second explanation for the male-female wage gap focuses on the division of labour between men and women's work in the labour market.

Occupational segregation takes two forms. Firstly, horizontal segregation occurs where women and men have different jobs. Secondly, vertical segregation occurs where, within the same occupation, women are concentrated in the lower hierarchial ladder of an occupation. "Occupational segregation by sex is a persistent, historical fact of women's participation in the labour force and is widely recognized as one of the most important factors of working life, contributing to women's secondary status in the workplace" (Gwartney-Gibbs, 1988, p. 264). However, the evidence regarding the causes and consequences of occupational segregation are sparse and complex.

Tradition, expectation and prejudice all play a role in determining the jobs that women and men take and how long they stay in them. Reskin and Hartmann (1986) and Treiman and Hartmann (1981) point out that most studies in this area are at best suggestive rather than definitive, and do not provide direct evidence that gender segregation accounts for the pay differential between men and women.

To some extent the difference in earnings, and the occupations that men and women hold reflect past and current discrimination. They also reflect differences between men and women in their preferences, attitudes, values, education, and experience. These factors are all inter-related, and the extent to which each prevails and the associated effects is difficult to separate.

Gender segregation can also be explained with reference to internal processess and workplace mechanisms that result in people being recruited, allocated and retained in particular jobs, i.e to the barriers to the operation of a labour market within the organisation. Additional sources of institutional rigidity arise from the prevalence of tradition in setting wages. These formal and informal processes constrain the free operation of the labour market and set an environment apart from external competitive forces. Large organisations use formal processes to determine pay internally.

This is through the use of salary structures, job evaluation and collective bargaining, as well as personnel practices dealing with transfer rules, job training, pay structuring and promotion, which if it is based on seniority may disadvantage women.

Informal processes include lack of infomation, exclusion from workgroups, inaccessibility to senior people and sponsorships, and sabotage by co-workers. Personal networks are often gender segregated, while information about new jobs or job posting is often not plant wide, and hence also gender segregated. Therefore, internal labour markets may act to limit women's mobility into, and advancement in traditional male jobs, as job shifts are restricted largely by the job family in which a worker is located.

Labour market segmentation allows for a number of different parts of the labour market. The dual labour market approach narrows this to just two sections, primary and secondary. Typically the part of the economy characterised by internal labour markets is referred to by Treiman and Hartmann (1981) as the primary sector, while remaining jobs form the secondary sector. The primary market is characterised by skilled jobs, high wages, training and promotion opportunities, security of employment, and high levels of unionisation. In contrast, the secondary sector typically has low wages, poor working conditions, high labour turnover, little advancement or unionisation, requires little job specific skill and has a lack of internal market structure.

The dual labour approach postulates that mobility from the secondary to the primary sector is difficult, and that women are disproportionately over represented in the secondary sector (Easton, 1983; Horsfield, 1988). In particular, these writers consider that women are more likely to be excluded from the primary sector and higher paying jobs by discrimination in employment opportunities and job assignment. While some women are however trapped in the secondary sector, there is no doubt that some women voluntarily choose jobs in this sector (Rubenstein, 1984).

The extent to which women's choices can be explained by various theories however is unclear. Rubenstein (1984) concludes that there are several different reasons for women's over representation in the low paid secondary labour market. The reasons explaining why women are concentrated in low paying jobs range along a continuum from an obvious prejudice to much more subtle differentiation of jobs. This remains a crucial question still unresolved.

In summary, three different explanations have been offered as to why women earn less than men (Treiman and Hartmann, 1981). The first is that women have chosen low paid jobs because of other non-pecuniary advantages, an explanation which focuses on the supply of labour. The second is that women are paid less because they have been assigned jobs of less value and excluded from high paying jobs in a discriminatory manner.

The third and final explanation is that jobs that women hold tend to be underpaid because they are held by women (Pfeffer and Davies-Blake, 1987).

While it is argued that women's work may be undervalued on the grounds of gender, there is little direct evidence that women are paid less because they perform women's work.

It is difficult to assess the relative contribution of employment discrimination in determining why women are low paid. It appears likely that women are paid less, partly because of the attributes they bring to the job, and partly because they are women. The extent that each reason explains the earnings gap between men and women is by no means clear. Studies employing more precise measures of job and worker characteristics would be very useful in resolving the conflicting theories. However, disentangling the various causal relations is very difficult.

2.2 THE LEGISLATIVE CONTEXT

As outlined in the previous section, there are a number of explanations for women's low pay. Some of these are not susceptible to legal solutions.

To the extent that women's low pay is attributable to family responsibilities, the major change required is attitudinal, and/or behavioural, entailing both the restructuring of work, and division of labour in the family. However, a number of countries have attempted to use legislative intervention in order to address some of the problems which are involved in comparable worth.

This section will review the legislation in the United States, United Kingdom, Canada and Australia and each country's respective experience with the concept of comparable worth. It shall then consider the New Zealand legislation, and the recent changes during 1990, concerned with implementing pay equity or equal pay for work of equal value.

During the 1980's, pay equity emerged as a major legislative issue. Pay equity periodically surfaced as an issue, most notably during World War I, but did not become a serious political demand until World War II, when a number of countries passed regulations that meant women would receive equal pay for equal work.

2.2.1 United States of America

In U.S.A law, there are two statutes which prohibit gender-based wage discrimination in employment. The Equal Pay Act of 1963 was enacted with the sole purpose of providing equal pay for equal work.

Title VII of the Civil Rights Act of 1964, however includes gender based wage discrimination within its general prohibition.

The scope of the 1963 Equal Pay Act's guarantee is quite narrow. Title VII is much broader, and makes unlawful any employment practice that discriminates against members of several protected classes, including women with respect to any terms of employment conditions. Several States in the U.S.A have also enacted legislation to incorporate the concept of comparable worth, while some trade unions have negotiated terms with employers who have settled to avoid long court wrangles.

Proceedings in any particular case begin with the Equal Employment Opportunities Commission considering a case of discrimination based on gender, and decides whether to investigate further and undertake litigation. If conciliation is not successful, then litigation is by means of the courts. However this has meant that the equal value movement in the United States has proceeded predominantly through the courts. Two important cases regarding comparable worth in the United States are County of Washington v. Gunther (1981) and State of Washington v. AFSCME (1985).

In Gunther, female prison guards charged that the county paid them disproportionately less than it paid male prison guards. The women did not assert that their jobs were equal to the mens.

However, they presented as evidence a county conducted evaluation of male and female jobs. This showed that while female and male jobs were ranked differently, women were only paid 70% of their evaluated worth, while men were paid 100% of their evaluated worth. Based on the evidence of the county's existing job evaluation, the Supreme Court ruled in favour of the woman prison guards. This represented a landmark decision in terms of comparable worth in the United States.

The second case in the U.S, which has received a great deal of publicity is the A.F.S.C.M.E case. The Federal District Court ruled that Washington State violated TitleVII of the Civil Rights Act (1963) by paying women employees lower wages than men in jobs requiring similar skill. However, in 1985 the decision lost on appeal, and an out of court settlement was agreed upon.

Previously job evaluation had not been an issue in the Equal Pay Act litigation. However, under Title VII, in the late 1970's, the issue of comparable worth emerged within the federal court system, and job evaluation, increasingly became relied upon as a tool in assessing job worth.

However the success rate of plaintiffs in the few comparable worth cases since Gunther have been poor (Bellace, 1987). The importance and method of job evaluation then, and the manner of setting wage rates as acceptable to the court, is still being tested.

Hyman (1986) states that the male-female gap in the United States is wider than that in most British Commonwealth countries. This is partly due to low levels of unionisation in the United States, while the small amount of change which has occured is still concentrated in the State sector.

2.2.2 United Kingdom

The International Labour Organisation in 1951, and organisers of the EEC in 1961 both adopted equal pay measures. Following the Treaty of Rome (1961), in 1975 the European Community adopted an equal pay directive (75/117/EEC) which guarantees women equal pay with men if they are employed in jobs of equal value. Upon becoming a member of the EEC, Britain was obliged to enact legislation which implemented equal pay for work of equal value. The 1970 Equal Pay Act had failed however to implement this guarantee, as it only provided a right to equal pay for like work. Therefore amendments to the 1970 Equal Pay Act were passed effective from January 1984 to move in line with EEC requirements. The amended legislation now enables women to claim equal pay for work of equal value, and aims to eliminate discrimination between men and women in basic rates of pay, and relates to any and all contractual terms and conditions of employment.

Following an application of a complaint, the Advisory Conciliation and Arbitration Service (ACAS) tries for voluntary agreement by conciliation by the parties involved.

Failing agreement, the Industrial Tribunal establishes whether a claim has a reasonable prospect of success. The claim is then normally referred to an independent expert appointed by the ACAS. In the case where an employer successfully presents evidence that variations observed are due to a material factor other than gender, the claim is not referred to an independent expert. Typically, however, the expert reports to the Tribunal, the results of the investigation. Either party can then challenge the experts reasoning, while the Tribunal finally determines the case based on all the evidence brought before it during the proceedings. Where it is concluded that the work is not of equal value, the application is dismissed. However if work being compared is found to be of equal value, the plaintiff succeeds, and the Industrial Tribunal awards areas of remuneration.

Under the British legislation then, jobs can be compared in terms of the demands on a worker under various headings, for example, effort, skill, responsibility and working conditions. This procedure is carried out by an independent expert, who is not required to apply any particular method of job evaluation. Furthermore, the regulations are complex, and also vague on many critical items relating to the evaluation of jobs. Only further litigation will therefore clarify what standards independent experts are expected to apply. However, serious concerns have been expressed about the validity of the work done by independent experts, regarding the technical validity of job evaluation, and the employers' ability to implement it.

While several cases have now been decided, by the Courts, Hayward v. Cammell Laird Shipbuilders Ltd (1984) stands out as a test case, and was the first equal value claim in Britain. In this case the Industrial Tribunal ruled that Hayward was employed in work of equal value, however that taken as a whole, compared to her comparators, her terms and conditions were not less favourable. Ms Hayward however appealed to the Employment Appeal Tribunal ([1986] IRLR 284) and to the Court of Appeal ([1987] 2AIIER 344), who both upheld the employers case. However, an appeal to the House of Lords ([1988] 2IIER 257) set aside the latter two appeal decisions and ruled in favour of Ms Hayward.

It appears that the legislation is not working as effectively as intended. In particular, it has been criticised as litigational, time consuming, and adversarial in nature. Both parties employ expert witnesses in a legislative approach, challenging the independent expert, and by the time a decision has been reached, often people have changed jobs or left the company (Hopkinson, 1990; Rubenstein, 1989).

2.2.3 Canada

In Canada equal pay provisions are contained within the Canadian Human Rights Act (1978), and the Equal Wages Guidelines of 1986. Section II of the Act makes it a discriminatory practice for an employer to establish or maintain differences in wages between male and female employees, employed in the same establishment, who are performing work of equal value.

Equal value is determined on the grounds of skill, effort, responsibility and working conditions while the procedure operates through the Canadian Human Rights Commission, and the Federal Court. Jurisdiction however is restricted to the public sector workforce for both individual or group cases.

Six provincial governments have also introduced pay equity legislation. Most recently in 1987, the Pay Equity Act of Ontario was passed, which requires "all employers with 100 or more employees in the private sector, and all public sector employers, to prepare and implement a pay equity plan over a period of six years" (Wilson, 1988, p. 18). The New Zealand Working Group (1988) reported that the Ontario legislation is a very complex, comprehensive system, reflecting the nature of the industrial relations systems within which it operates. However, the Working Group (1988) concluded that a more permissive approach would be preferable in New Zealand, and therefore recognised the limited value of the Ontario experience for New Zealand.

Secondly, the Pay Equity Act (1985) of the Province of Manitoba is of particular interest, and has been used as a basis for the New Zealand legislation. The Act prohibits discrimination in pay based on the gender of employees for work of equal or comparable value, and operates through the Pay Equity Bureau together with an appointed Executive Director.

In determining value, the criterion to be applied is the composite of skill, effort, and responsibility, normally required in the performance of the work and the conditions under which the work is performed. The government, then together with the Civil Service Commission develops a single gender-neutral job evaluation system in agreement with the bargaining agents, and endeavours to reach an agreement on the basis of a job evaluation system. Where parties fail to reach an agreement, either party may refer the matter to the arbitration board, where the board's order is final and binding to all parties.

However similarly, as with the Canadian Human Rights Act (1978), the legislation only applies to the public sector, while in New Zealand it is intended to cover the public and the private sector.

2.2.4 Australia

Australia has no specific equal pay legislation, at either state or federal level, but operates through a complex system of quasi-judicial proceedings.

Moreover, decisions then, on equal pay are incorporated in decisions handed down by the Federal Arbitration Commission and the State Industrial Tribunals.

The general approach originated from two decisions in 1969, and 1972. A 1969 decision of the Federal Tribunal established equal pay for equal work by 1972, and this was extended in 1972 to equal pay for work of equal value with effect from 1975 (Hyman, 1986). In 1972, the Australian Conciliation and Arbitration Commission ruled that equal pay for work of equal value would be applied to all awards by the Commission.

Under this ruling, work may be compared between different awards, and with work done by both genders. Arbitration by the Commission then, decides if differences in work performed are sufficiently significant to warrant a differentiation in wage rates. Implementation of the new principle by arbitration, will call for the exercise of the broad judgement which characterised work value inquires. Different criteria will continue to apply from case to case, and may vary from one class of work to another. Finally, the value of the work refers to worth in terms of award wage, as opposed to worth to the employer.

It has been suggested that this decision was to remove pay discrimination in Australia (Gregory and Duncan, 1981) quoted in Hyman, (1986). However, Hyman (1986) notes that equal pay campaigners completely disagree with this, as no means to implement the principle satisfactorily were established. In Australia, one of the weaknesses of the pay equity system is its omission of gender neutral job evaluation methods to determine the relative value of work.

Aaron and Lougy (1986) report that since 1975 the ratio of women's earnings to men's earnings in Australia rose from 65% to 85%. Australia seems to have made the largest gains of any country to date. Hunter (1986) observes that the history of the comparable worth issue, particularly the Australian experience, shows that such a policy is not only workable, but is in fact sustainable.

The largest pay ratio increases appear to have occured in Australia and Britain, while the effect in the United States has been smaller. A major reason for the bigger impact in Australia than in Britain appears to be that the low pay of men in what are predominantly women's occupations in Britain placed a ceiling on the pay increases that might occur for women (Gregory, Daly and Ho, 1986).

A similar limitation operates in the United States. These results raise the question as to the relevant comparison group for comparable worth decisions.

> *"If comparisons are restricted to men who work in female occupations, i.e an equal pay concept, then little change in the pay structure would occure in the U.S. as a result of the introduction of comparable worth" (Gregory and Ho, 1985, p.24).*

Therefore, women's pay needs to be compared to the average male pay structure in an appropriate job to ensure relative pay increases.

Opponents of pay equity argue that rising prices of women's labour in the stereotypical female occupations can be expected to shrink the amount of labour that employers will wish to employ in such occupations. Two economists, Gregory and Duncan, quoted in Bergmann (1986) studied the effects of comparable worth on women's employment in the Australian labour market. They conclude however that in the Australian experience, the drop in employment of women must have been quite small, and expressed surprise that the large changes in relative pay of men and women had such modest effects on labour demand. Pay adjustments for women in Great Britain appear similar, with little or no extra unemployment for women workers" (Bergmann, 1986)

Further, Bergmann (1986) concludes that research implies that the benefits for women, from higher pay while employed outweigh the losses that result from higher unemployment rates. In contrast, Aaron and Lougy (1986) interpreted that Gregory and Duncan findings, as demonstating that the Australian legislation had a perceptible impact on the growth of female employment, and on the female unemployment rate. Clearly the extent that the legislation has effected the supply and demand for labour remains in dispute.

Daniel Mitchell quoted in Aaron and Lougy (1986) concluded that researchers have had to manipulate the data to come up with any signs that the demand for women relative to men was reduced

Further, Gregory and Ho (1985) state that since the introduction of comparable worth, female employment has continued to grow at a faster rate than male employment, despite the fact that for both groups the rate of increase in employment numbers has slowed. They also conclude that unemployment amongst Australian women has fallen relative to that of men, and that there is no evidence that Australian women have been seriously disadvantaged by the introduction of comparable worth.

Finally, while Gregory and Ho (1985) recognised the difficulties associated with comparing labour markets across countries, they note that equal pay experiences in Britaon and Australia have produced similar results. Both have seen an increase in female pay rates, with little relative employment loss. The effect in the United States however, has been much smaller than in Australia.

2.2.5 New Zealand Experience

In New Zealand the enactment of the anti-discrimination legislation in the 1960's and 1970's was an important step towards the achievement of employment equity. The government service Equal Pay Act came into force on 1 April 1961 while the Equal Pay Act (1972) implemented the principle of equal pay in the private sector. It provided for the removal and prevention of discrimination, based on the gender of employees, in the rates of remuneration of males and females in paid employment.

However while the earnings of women rose relative to those of men, there has been no significant closing of the gap since 1977 (Equal Pay Steering Committee, 1987).

It seemed that while the Act prevented discrimination based on sex in rates paid for equal work, it was not successful in implementing equal pay for work of equal value. Hyman (1987) makes the point that it is clear that the act was intended to apply more broadly than simply to equal pay for identical work, and was intended to also incorporate the notion of comparable worth, involving comparisons between different types of work.

Against this background, the Clerical Workers Union took a case to the Arbitration Court in February 1986, seeking a ruling that the employers should be directed to negotiate a claim for equal pay for work of equal value. The Clerical Union Case (1986) was seen by many organisations and individuals as a test case. Orr (1986) discusses in detail the role of the Arbitration Court, both in this case, and more generally in interpreting the Equal Pay Act.

However, while the spirit of the Act was to address equal pay for work of equal value, the wording of the legislation, and its operation through narrowly applied job classification, hindered its application. Inadequate policing of the Act and use of discriminatory job titles also contributed to evasion of its principles.

In effect, the Court ruled that the Equal Pay Act (1972) contained no powers or provisions by which the Court could address the notion of comparable worth sought by the Clerical Workers Union. The ruling, in essence, meant that if awards had been registered during 1973 and 1977, indicating de facto acceptance that they incorporated the principle of equal pay, then the question could not be reopened.

Whether or not the Act could have been used in the implementation period for real equal value cases, following the Clerical Workers Union Case such an option was effectively ruled out. Since then, various factors have led to a new impetus. The realisation that the pay gap had not been decreasing, the influence of overseas campaigns and the Court's decision in the Clerical Workers Union Case, meant that equal pay again became an issue.

Since 1986 the campaign has been aimed at producing legislation to replace the 1972 Equal Pay Act, which will incorporate the principle of equal pay for work of equal value. The Government response to pressure for a review of the Act was to commission, in 1986, a study of the male-female earnings gap and the factors accounting for such a gap.

Phase One of this study, which consisted of identifying the extent to which the male-female earnings gap was due to discrimination, and the extent to which it was due to other factors was completed during 1987.

Phase Two, which was also completed in 1987, involved mainly of an outline of legislative provisions in various overseas jurisdictions, and briefly discussed policies to narrow the wage differential. Phase Three was effectively transformed into the Working Group on Equal Employment Opportunities and Equal Pay. The group's report, "Towards Employment Equity" (Wilson, 1988) established in March 1988, recommended new legislation covering both equal opportunity and equal pay for work of equal value. Acting on the Working Group's recommendations, in November 1989 the Government introduced legislation.

The Employment Equity Bill, was following referral to a select committee, subsequently became part of New Zealand law on 15th July 1990. Its intention is to provide both a right for employees to pursue pay equity claims, and an obligation for employers to develop equal opportunity programmes. The basic pay equity system allows any union or employer, or group of 20 or more women to request an employment equity assessment to determine the extent to which there is gender bias evident in the pay rates for that occupation (Clark, 1989).

The assessment would be determined with reference to at least two male occupations, (one of which will be from the same or similar enterprise, and one of which must be of broadly similar skill and experience) and the outcome would be used in award negotiations.

The legislation has however come under considerable attack. The main criticism, by employer groups and the New Zealand Business Roundtable, is that the legislation introduces elements of rigidty, and hence is at odds with policies aimed to free up the labour market. The Business Roundtable see the policies recommended by the Working Group, and contained in the legislation, as increasing barriers to market checks on discrimination by employers. In contrast, it is their view that a more efficient means to reduce the potential for discrimination should focus on reducing regulatory barriers to competition in the labour market (New Zealand Business Roundtable, 1988).

They also point out that the Working Group's report glosses over issues such as how and where discrimination occurs and in effect assumes discrimination on the basis of inequality of outcomes. Further, the Business Roundtable describes the legislation as an unfair and costly policy (Hopkinson, 1990). They see the pay equity proposals as reducing employment opportunities for both men and women. It is argued that while the income of some women would be raised, higher costs would be incurred by employers, and therefore there would be fewer jobs. In effect, higher paying jobs for some women would be at the expense of women who either lost their jobs or faced reduced employment options. Instead the Business Roundtable recommends that educational reforms be used to breakdown sexual stereotypes, that are both inaccurate and detrimental, together with a policy of labour market deregulation.

As previously mentioned the major counter arguments by those in favour of the legislation is that the market is already so distorted, that supply and demand forces cannot work equitably in the labour market. Hyman (1986) also argues that implementation of equal pay for work of equal value, would not lead to substitution effects resulting in increased unemployment for women.

The theory of equal pay for work of equal value, its ideological struggles and its legal strategies continue to attract considerable attention. The principle assertion of the comparable worth stance, is that, jobs that are of similar worth should be paid similarly. Under a policy based on this principle, jobs that are of equal worth would be equally compensated whether of not they are equal in the specific tasks they perform. With the passing of the Employment Equity Act (1990), workers may now seek equal pay for work of equal value. This then has meant that determining the value of jobs has become a legal concern, and introduces the issue and associated problems in generating accurate, bias free job evaluations.

The following section will outline different job evaluation systems, and their associated problems. More specifically it will address the issue of gender bias in job evaluation schemes, which this study aims to investigate.

2.3 JOB EVALUATION AND COMPARABLE WORTH

Job evaluation techniques have been in common practice around organisations in many industrialised countries for about half a century. The first attempts were introduced over one hundred years ago by the United Stated Civil Service Commission. In New Zealand there are a number of systems available, which have been developed both locally and internationally, although accurate data on the extent of their use is not available. There are a number of generic types, as well as a considerable number of derivative methods, marketed in the main by international consulting firms (State Services Commission, 1988).

Job evaluation methods can be divided into two broad types, whole job (or qualitative) and factor (or quantatative) methods. Whole job methods involve the placement of whole jobs relative to one another on a dimension of job worth. Whole job systems include simple ranking, and the classification methods. In the ranking method, jobs are compared on the basis of general impression, and are ranked from highest to lowest, while the classification method allocates jobs to a grade with a predetermined set of hierarchially ordered grades (Elizur, 1987, Burton, 1989, Treiman, 1979).

The second type of job evaluation method consists of quantatative or analytical methods.

These systems, which permit a more detailed analysis of the factors underlying a job's worth, and include the factor comparison and point methods.

Factor comparison involves the development of a set of benchmark jobs, which are ordered and described in terms of the degree of each *compensable* factor they possess. The term compensable refers to job characteristics that are regarded as contributing to the overall worth of the job (Treiman, 1979, p. 6). When another job is evaluated, it is assigned points by comparison with the benchmark jobs, factor by factor.

The second and more widely used quantitative method is the points rating method (Wittig and Lowe, 1989). In this approach a definition and a rating scale are developed for each compensable factor. The evaluation process then consists of rating a job on each factor, and assigning points from a predetermined scale. Scales used in the points rating method are developed by one of two methods, the *policy capturing* approach or the *a priori* approach.

The policy capturing approach is developed by using an existing pay structure to statistically determine which attributes of jobs best predict existing pay rates. The alternative approach is to define a set of factors that are assumed a priori to contribute to the value of jobs. Job worth then, is defined by the factors that measure it and rejects existing wage rates as the appropriate criterion.

In each method, then, for each factor a scale is weighted to reflect the relative importance of each particular factor. According to comparable worth "two jobs would be similar if their composite scores are the same" (Wittig and Lowe, 1989, p. 10).

Job evaluation procedures are a means by which gender-based wage discrimination as well as pay equity adjustments can by measured. In effect, job evaluation results can assess the worth of jobs and whether or not similarly evaluated male and female dominated jobs in a pay structure are paid at the same rates. Therefore some form of job evaluation lies at the heart of the equal pay for work of equal value issue. Job evaluation methods are however not without their criticisms.

There is no such thing as a completely objective job evaluation system. Despite attempts to design a systematic job evaluation method, and maintain objectivity, the process is essentially judgemental (Hyman, 1986; Treiman and Hartmann, 1981).

Because many of the procedures involved in job evaluation are inherently subjective, these practices have been suspected of being biased and discriminatory against jobs held predominantly by females. Many reviewers therefore have acknowledged the possibility of gender bias to occur.

The best known review of the discriminatory potential of job evaluation systems are contained in two publications, Job Evaluation : An analytical review by Treiman, 1979 and secondly Women, Work and Wages : Equal Pay for Work of Equal Value by Treiman and Hartmann, 1981, both commissioned by the United States National Academy of Sciences. In particular, two major sources of discriminatory error have been identified; the choice and definition of factors, and the psychometric properties of the measures.

2.3.1 Choice and Definition of Factors

One major source of gender bias according to the review is the choice, definition and weighting of the factors used in job evaluation plans. The relative ranking of jobs tends to be highly dependent upon which particular factors are used in the evaluation and how heavily each is weighted.

Hyman (1986) notes two particular types of bias which are likely to occur which may perpetuate discrimination against women. The first is the use of current market wages to value or weight job factors. If these market wages are already partly a result of sexual discrimination the process will not only be circular but also will perpetuate such discrimination. This is known as a policy capturing approach.

A second type of bias identified by Hyman (1986) may creep into the evaluation of different factors. For example, responsibility for financial decisions may be regarded as more important than responsibility of resource decisions. Similarly, effort is usually measured by strength requirements rather than fatigue levels.

> *"As another example, manual skill factors stress ability to handle tools rather than manual dexterity which has the effect of down-grading fine assembly work, down largely by women" (Treiman, 1979, p.32).*

Job evaluation schemes then, by way of definition of job characteristics may emphasize aspects of a factor which predominate in male dominated jobs.

The National Academy of Science Study's (Treiman, 1979; Treiman and Hartmann, 1981) second summary conclusion was that job evaluation is inherently subjective. It is possible for bias to enter into the process at two points : in the writing of the job description itself and in the evaluation of the description. Bias may also be built into the design of the system as outlined above.

Bias can also operate during the job analysis phase of the job evaluation process. The problem arises here in the use of inaccurate or incomplete job descriptions.

First, job descriptions may not reflect the reality of the content and skills needed. This may arise in the collection of information about jobs. Various techniques including interviews, observation, questionnaires and job sampling are used to gather information. It is suggested that supervisors are in fact, relied on heavily for information about jobs (Treiman, 1979). This however means that supervisors need a complete knowledge of the jobs that they are describing. Where this is not the case it may be that job content is understated.

Self report is another means of collecting information, but again, this method is susceptible to bias when incumbents give unreliable information regarding their tasks. Regardless of the method, problems exist in the collection of information. It is therefore important that unions and workers, as well as supervisors and employers are involved in job sampling, and the collection of information about a job.

After obtaining information about a particular job, the job analyst prepares a description of the contents of the job. This task requires considerable selection of material, to emphasize the most important tasks, duties, and responsibilities, while avoiding irrelevent detail. This aspect of the procedure is also highly judgemental, and susceptible to bias. It is important therefore, that individuals, receive appropriate training in the discussion, interpretation, and choice of words in the presentation of information used for describing jobs.

2.3.2 Reliability

Most job evaluation systems in use, require the evalator to rate each job description on a variety of factors. This is at least as subjective a process as writing the job descriptions. There are two conventional criteria for assessing the adequacy of rating tasks : reliability and validity.

The research results in terms of reliability of job evaluation measures tend to be mixed. Early research in the 1940's that focused on the reliability of job evaluation, indicated relatively high reliabilities (Ash, 1948; Chesler, 1948; Lawshe and Wilson, 1947; Lawshe and Farbo, 1949). More recent psychometric evidence indicates that total point scores tend to be more reliable than individual factor scores.

A study by Doverspike, Carlisi, Barrett and Alexander (1983) undertook to re-examine the reliability of a point method of job evaluation. Results revealed that adequate levels of reliability were reached using a properly designed point system of job evaluation. Doverspike and Barrett (1984) indicated similar results. Treiman (1979) concluded that reliability however, is not the major issue when it comes to assessing the fairness of job evaluation systems. Validity is.

2.3.3 Validity

In essence, the question of validity is how well a particualar job evaluation instrument reflects the worth of the jobs which it is intended to measure. In particualar, the question has been raised whether gender role stereotypes influence the evaluation of jobs. That is, are jobs which are held by women evaluated differently from jobs held by men, even when their content is virtually identical.

A number of studies pertaining to the question of gender bias against female jobs have been carried out in the last decade. Earlier research, related to the evaluation of personnel, derives from a genre of studies in experimental social psychology. Subjects were presented with information describing the qualifications of individuals, and asked to rate them on one or several dimensions (Treiman and Hartmann, 1981). Nieva and Gutek (1980) provide an extensive review of research on the evaluation of the qualifications and performance of men and women.

Treiman (1979) concluded that in a variety of contexts, the mere fact of identifying a performance as being done by a woman resulted in a lower evaluation and a lower likelihood of reward, than when the identical performance was attributed to a man.

Treiman (1979) concluded that while most of the early studies refer to the evaluation of people, rather than jobs,

> *"the evidence for sex stereotyping in job related contexts is certainly strong enough to suggest the likelihood that sex stereotyping will pervade the evaluation of jobs strongly identified with one sex or the other. That is, it is likely that predominantly female jobs will be undervalued relative to predominantly male jobs " (p. 45).*

On the basis of this hypothesis, research during the 1980's has focused on clarifying to what extent gender stereotyping is likely to operate in the evaluation of jobs. Schwab and Grams (1985) identified three forms of gender bias which may operate in the job evaluation process.

The first, direct bias, would occur if jobs held predominantly by females are judgementally undervalued relative to predominantly male jobs with the same content. Second, indirect bias would occur if job evaluation judgements were influenced by knowledge of potentially discriminatory current wages. Typically a system of job evaluation is applied to a sample of jobs, and validated against some external criterion of worth. Two criteria of worth commonly applied in this validation are subjective judgement of employers (acceptance) and relative current wages (Mahoney and Blake, 1987).

However observed market rates have been criticised as perpetuating wage relationships derived from past discrimination. Grams and Schwab (1985), commented that if evaluation judgements are influenced by current wages that are themselves biased against jobs in which women predominate, then such a bias can produce relatively deflated evaluations for jobs held predominantly by women. The third form of bias would occur if the gender of the evaluator influenced job evaluation judgements. Each of these sources of bias will now be reviewed.

Direct Bias

A number of studies have investigated whether incumbent gender influences job analysis and job evaluation judgements. A study by Arvey, Passino and Lounsbury (1977) manipulated the gender of a job with photographs and recorded voices of male and female incumbents. They indicated that analysts completing the Position Analysis Questionnaire (PAQ), did not bias their ratings as a function of employee gender. Although the study dealt with job analysis rather than job evaluation perse, the results are relevant to understanding how individuals' judgements about jobs are influenced by characteristics of people in the jobs (Mount and Ellis, 1987). On the other hand Mahoney and Blake (1979), quoted in Arvey (1986), and Mahoney and Blake (1987) reported that the perceived femininity of 20 well known occupations accounted for a small but statistically significant amount of variance in assigned salaries.

Carlisi's (1985) study investigated if job evaluation ratings were biased due to the influence of gender stereotypes and the results also revealed a gender bias. Overall, stereotypically female jobs were evaluated lower than stereotypically male jobs of comparable worth. Carlisi (1985) concluded that raters appeared to rely on stereotypes, rather than on job information, when making job evaluation ratings. Champion (1987) also found that results tentatively indicated that the gender identification of a job may influence evaluators' judgements in the assignment of job evaluation ratings.

In contrast, a study by Grams and Schwab (1985) indicated little evidence to suggest that gender composition of jobs influenced job evaluation ratings. They experimentally manipulated gender composition by varying the ratio of females to males reportedly performing one of three jobs. Using college student raters, they found no support for the hypothesis of direct bias.

In another study Schwab and Grams (1985) presented results where 103 compensation practitioners evaluated jobs where the dominant gender of incumbents was manipulated. Again they found no effect of job gender on either the absolute rating or relative standing of the manipulated job.

Mount and Ellis (1987) investigated the effects of perceived job gender on subsequent job evaluations. Job gender was manipulated by providing a male or female job title for each of the two job descriptions, which were evaluated by 53 individuals, nominated by their supervisors, and subsequently trained by outside consultants in a comparable worth context.

Unlike the findings of other researchers, Mount and Ellis (1987) found a marginally significant main effect for job gender, which contrary to the authors expectations, indicated a pro-female bias by the evaluators. What is surprising however, is that indirect pay bias (also investigated), was persistently present, despite that the sample were predisposed to avoid it.

Another study by Naughton (1988) also manipulated job gender through the use of female linked job titles. Student subjects rated two jobs on nine factors commonly used in job evaluation plans. For one half of the subjects, the job titles for the two jobs reflected a female sex linkage, while the other half reflected a male linkage. The results indicated that one of the two jobs with a female title received 5.6% fewer total points. Where bias occured however, it appeared to be based on job content factors (effort and responsibility) rather than on human capital factors (education and experience).

McArthur and Obrant (1986) manipulated job gender composition by giving subjects information regarding the number of men and women performing a job. Undergraduate student subjects also viewed a videotape of each job, in which the actor was either male or female. Results indicated that whereas the gender of the incumbent had a strong effect on job description ratings overall, the gender composition of workers had no significant effect on job evaluation ratings. McArthur and Obrant (1986), however, concluded that their study did not provide an adequate test of the effects of this variable, in as much, that subjects failed to recall the gender composition information they received.

Hornsby, Benson and Smith (1987) also manipulated the gender composition of job holders in two ways. Firstly, subjects evaluated four jobs having ambiguous gender, which was manipulated by stating the percentage of male or female incumbents in the job. Secondly, subjects rated either a matron or a jailer job description, which differed only in the job title and the use of gender specific pronouns. In addition, two clearly gender stereotyped jobs were included, as well as a relatively gender neutral job. When gender mix was manipulated through percentages, no significant effects were found. However, the use of titles and pronouns, produced results where the matron job was evaluated higher on complexity and purpose of contacts, whereas the jailer job was evaluated higher on the work environment factor.

Finally Rynes, Weber and Milkovich (1989) investigated the effects of job gender on the assignment of new pay rates. A total of 406 compensation administrators assigned new pay rates to nine jobs, in one of two matched job sets, either all predominantly female or all predominantly male. The two sets were matched on current pay, market rate and job evaluation points, but varied in terms of job titles and descriptions. The study differed from others by examining job gender in the context of both market and job evaluation information, while assigned pay rate served as the dependent variable. Despite this, no evidence of gender bias was found.

The empirical evidence regarding direct bias is inconsistent. While a number of studies indicate little or no evidence, other research has found partial support that gender composition may influence job evaluation.

A possible explanation for previously non significant results regarding job gender is that earlier experimental manipulations were not effective in triggering gender stereotypes about jobs. McArthur (1984), quoted in Hartmann (1985) suggested that people's social judgements are relatively insensitive to abstract information concerning population base rates, and therefore additional research would benefit whereby job gender might be manipulated in alternative ways.

Krefting, Berger and Wallace (1978), suggested that perceived masculinity or femininity of a job is related to that job's true gender mix. It was suggested then that evaluators react more to perceived masculinity or femininity than to artificially manipulated job incumbent gender ratios (Hornsby, Benson and Smith, 1987).

Arvey (1986) recommended a number of alternative gender manipulations. These included designs whereby identical job descriptions are presented with different job titles denoting a particular gender. A second variation suggested by Arvey was to match jobs with different content on the basis of job analysis information. A third type of manipulation uses male or female actors portraying a job, or photographs or recorded voices of male or female incumbents.

Recognising the limitations in past research, Mount and Ellis (1987) manipulated job gender by using male and female titles for identical job descriptions.

This was believed to more closely simulate the indirect manner in which evaluators receive cues about the gender composition of jobs in organisational settings. In fact, unlike those from other research, the Mount and Ellis (1987) results indicated a pro-female bias. A potential weakness however of this study, was that the subjects had received extensive training in job evaluation and pay discrimination (Rynes et al, 1989). Another explanation is that persons volunteering to participate in a comparable worth study may have had more favourable prior attitudes towards women's work than those who did not volunteer. In turn this may have led to over-compensation by some individuals in their evaluation of female jobs. Finally, Mount and Ellis (1987) recommended more research on judgements made by real world job evaluators.

Indirect Bias

The second category, proposed by Grams and Schwab (1985), indirect bias, questions whether knowledge of market pay rates for jobs influenced subsequent job evaluations. Studies investigating indirect bias have been fewer, and have yielded similar results as one another.

Typically the average rate of pay for a job is set. Then pay rates are manipulated to correspond approximately with the societal pay differential between male and female dominated jobs. The information is then embedded in the job description.

Grams and Schwab (1985) varied and crossed gender composition and current pay rate for a banking job only. In half of the job background descriptions the reported salary was $18,222 and in the other half, it was reported as $27,320. Two other jobs were described as paying $12,900 and $20,790. The results showed that manipulated pay levels significantly influenced ratings independent of job gender. The authors concluded that overall, pay had a modest effect on the absolute point score evaluation of the manipulated job. More strongly though, current pay affected a job's relative position in a hierachy of similar jobs far more than it affected its absolute point value.

In a similar study, Schwab and Grams (1985) investigated indirect bias in judgements by 103 compensation practitioners. The manipulations were essentially the same as those in the previous study. It was found that pay rates had a similar significant effect, accounting for 12% of the total score variance. Furthermore, pay level interacted with jobs and accounted for 40% of the variability in ratings, again indicating a large effect of pay levels on the relative evaluation of the three jobs.

Mount and Ellis (1987) also manipulated pay rates for two jobs. Their results indicated a statistically significant main effect for pay level. Overall they concluded that the results provide support for the hypothesis that jobs in the high paid condition were rated higher than those in the low paid condition. However, the results accounted for less variance than those reported in the two previous studies, and this may have been due to the fact that the raters were trained in comparable worth job evaluations.

Rynes et al (1989) also manipulated both job evaluation points and pay rates. Consistent with the findings of other studies, they found a significant effect for pay level. The results indicated that market pay accounted for 58% of the variability in assigned pay, which raises the possibility that indirect discrimination still exists.

Although fewer in number, studies investigating indirect bias, provide strong support that current pay has an effect on job evaluation scores.

Gender of Evaluator Bias

The final form of bias to be considered is gender of evaluator bias. Most of the studies investigating whether evaluator gender influenced job evaluation have found no significant effect (Mahoney and Blake, 1987; Schwab and Grams, 1985; Grams and Schwab, 1985; Naughton, 1988; Carlisi, 1985 and Campion, 1987). By contrast however Arvey et al's (1977) study indicated a tendency for female job analysts to give consistently lower scores on job analysis dimensions than did male analysts.

McArthur and Obrant (1986) also found an interaction effect between evaluator gender and worker gender. It was found that jobs enacted by males were rated as less structured than those enacted by females by male evaluators. Futhermore, female evaluators scored the jobs as requiring more decision making and more education when they were enacted by males than when they were enacted by females.

In their study, Rynes et al (1989) found females in their sample somewhat less lenient in a complex interaction with other study variables. They were however hesitant in drawing conclusions based on the interactions, given the large number tested.

Finally Hornsby, Benson and Smith (1987) found that the gender of the evaluator only significantly affected the evaluation of one job, the mechanic. Further investigation showed a general pattern for females to evaluate the job slightly higher than males.

In summary, it appears that in terms of gender bias, typically male and female evaluators are similar in their evaluations. However, some studies indicated that male and female evaluators do differ, although the effects are relatively small.

An essential requirement for valid job evaluations is that the ratings of job worth are based on the specific contents of the job being evaluated. Evaluators are instructed to evaluate the job, and not the incumbent. Specifically they should not rate jobs on the basis of who the incumbents are, or on the basis of any other non job issue. However it has been proposed that job evaluators do not confine their evaluations to the content of the job description, but rely on other sources of information. In summary results of the empirical studies reviewed above, of the three sources of bias (Schwab and Grams, 1986), provide mixed evidence.

The literature review has described the potential reasons surrounding and explaining the earnings differential observed between men and women. This introduced the concept and relationship of comparable worth with the implementation of legislation. The review then examined the literature on the legislative context, overseas and within New Zealand. Subsequently, job evaluation was examined as a tool to implement the principle of equal pay for work of equal value. However, job evaluation is not without its criticisms. The literature is reviewed with respect to these, and specifically examines the problem of validity. This approach focused largely on the quality of ratings that emerge from the rating process, and particularly the possibility for gender bias into enter the evaluation process.

CHAPTER III

METHOD

3.1 RATIONALE

Within the last decade, job evaluation has received considerable attention in the literature, as a potential mechanism for establishing pay equity. However, a number of concerns regarding its reliability, validity, and susceptibility to bias have been raised. A particularly important source of bias is the potential effect of gender-related bias. Schwab and Grams (1985) proposed three ways in which gender bias may adversely affect females. The first source of error, *direct bias,* occurs if predominantly female jobs were undervalued relative to jobs in which men predominate as a function of gender per se. The second type of error, *indirect bias,* occurs if perceptions of job worth are influenced by the current pay levels associated with a job. The third type of bias is whether the *gender of the evaluator* affects evaluation scores.

Following Schwab and Grams hypotheses, a number of researchers, as examined in the literature review, considered the various potential sources of gender bias. Most recently Mount and Ellis (1987), Hornsby et al (1987), and Rynes et al (1989) examined the issues, although their respective designs vary. Another major difference in the studies were the subjects researchers used.

The majority of studies used college students as subjects, while Mount and Ellis (1987) used participants who had had training in comparable worth. Partly then, due to the procedural differences, results surronding the investigation of gender biases are inconclusive.

In New Zealand, prior to the Employment Equity Act, passed in July 1990, there was no legislative means by which the concept of equal pay for work of equal value could be addressed. However, the 1990 Act introduced the principle of pay equity onto the New Zealand industrial relations scene. Consequently, this brought with it the related procedure of job evaluation, as a tool in the assessment of job worth.

The present study was conducted to examine three gender biases proposed by Schwab and Grams (1985). This study was interested in to what extent individuals (involved in compensation decisions) were susceptible to gender biases as manipulated by the study, in a job evaluation procedure. It is proposed that the introduction of pay equity legislation will place greater emphasis on job evaluation systems, and will require a greater familiarity with their operation. In particular, employers will need to provide justifiable pay structures in the face of possible pay equity claims. This study, was therefore interested in evaluations made by practicing personnel managers, who are increasingly likely to be involved with the procedure of job evaluation. The present study was aimed at assessing to what extent real world job evaluators were prone to the three biases proposed by Schwab and Grams (1985), and how the results compared with similar studies overseas.

3.2 SUBJECTS AND SETTING

Sixty male and sixty female professionals working in the area of personnel and compensation in the Christchurch region served as participants for this study.

The sampling procedure yielded what was essentially a snowball sample. The initial pool of subjects were enlisted from the Christchurch Telephone Directory, under the headings, Industrial and Management Consultants and Personnel Consultants. Consultants in thirty-four firms were contacted by telephone and asked if individuals would be prepared to participate in the study. A brief background of the research, and the subsequent procedure was explained to the subjects. For 17 firms, more than one, and up to five individuals from the same organisation agreed to participate in the study. Consenting participants also provided contact with additional individuals, working in personnel positions, in a variety of industries within Christchurch. The further potential subjects were also contacted by telephone requesting their participation. Overall 84 individuals agreed to participate from these sources.

A further 66 subjects were arranged through personal contact with the author, and contacted by telephone, whereby the procedure was outlined and participation agreed upon. The subjects represented male and female, middle and upper management from a variety of organisations.

Subjects all had experience in personnel and compensation, and came from various sectors including voluntary agencies, law, finance, manufacturing, service, retailing and the public sector. Of the total of 150 individuals who initially agreed to participate, 128 subjects completed and returned the postal questionnaire, giving a response rate of 85.3%. In order to equalize cell sizes, eight questionnaires were removed on a random basis.

The 120 subjects, whose data were analysed in the study were categorised into four age groups. Fourteen were aged between 20 and 30 years old, forty-six were aged between 31 and 40 years, forty-four between 41 and 50 years and four were aged between 51 to 60 years (11.7, 38.3, 36.7 and 13.3 percent respectively).

Subjects were also questioned as to whether or not they were experienced with any procedure of job evaluation, and if so with which method-ranking, point, classification or the factor comparison method. Sixty-two subjects (51.7%) had had experience with job evaluation, and 57 subjects (47.5%) had not, while one subject failed to answer the question.

Of those who had had experience with job evaluation, 45.2% had used the rank method, 33.9% had used the classification method and 14.5% had had experience with the factor comparison method. Of the sample as a whole, 23.%, 17.5%, 16.7% and 7.5% had had experience with the ranking, point, classification and factor comparison methods respectively.

The investigator in this study was a 22 year old female psychology student at the University of Canterbury.

3.3 EXPERIMENTAL DESIGN

In order to examine three forms of gender biases, subjects used a procedure similar to a simplified point method of job evaluation. They were instructed to rate job descriptions on three factors commonly used in job evaluation; complexity of duties, education and experience. Complexity, education and experience, and a combined total score represented the dependent variables for four jobs.

There were three independent variables; job gender, pay level and evaluator gender, each with two levels. Sixty male and sixty female subjects received four job descriptions. Each group was randomly assigned one of the four possible combinations; a male titled job with high pay, a male titled job with low pay, a female titled job with high pay or a female titled job with low pay. The design required that subjects be divided into eight cells, with 15 subjects in each. Results were analysed by 16 ANOVA's in total.

3.4 MATERIALS

The primary purpose of the study was to investigate three forms of gender bias in job evaluation.

The first type, direct bias, as identified by Grams and Schwab (1985) occurs if predominantly male jobs are evaluated over and above predominantly female jobs of similar content. The second systematic error investigated, indirect bias, would occur if already discriminatory wage rates influenced job evaluation judgements. The final type of bias to be considered was whether the gender of the evaluator influenced job evaluation scores.

3.4.1 Job Description

Prior to the main study two pilot studies were conducted. Pilot I was aimed at establishing the percieved typical job gender of 60 occupations. The occupations were selected from the New Zealand Standard Classification of Occupations, on the basis of their general familarity. Embedded in the list were five job pairs, which were hypothesized to be perceived as predominantly male or female. The occupations were nurse aid and orderly, shop assistant and spareparts salesperson, hairdresser and barber, tailor and dressmaker, and cook and chef. Thirty subjects pooled from a garage, a shop, a voluntary agency, and an evening typing class agreed to complete the task. Subjects were instructed to rate each occupation, and describe it as either masculine, feminine or neutral based on how they perceived it. Subjects were asked to indicate their preferred choice by circling the appropriate label. On the basis of the results from the study, two job pairs were choosen for the main study. These were hospital aid and salesperson.

Manipulation checks revealed that eighty-nine percent of the respondents correctly identified the intended job gender for nurse aid and orderly. Ninety-three percent correctly identified shop assistant as female, while spareparts salesperson was identified as male by ninety-six percent of the raters. The police officer and principal titles were not checked due to their either gender associations.

On the basis of subjects' categorisations two pairs of jobs were chosen for the main study. The jobs, hospital aid and salesperson were chosen because the were amenable to the manipulation of 'male' and 'female' titles, and their intended job gender was correctly identified by raters.

Two further jobs, police officer and principal were chosen for the main study. Police officer and principal were also amenable to the manipulation of male and female titles, as well as allowing the effects of job evaluation error to be assessed across jobs at different hierarchial levels.

Job descriptions used in this study were very similar to, but not identical to those in the New Zealand Standard Classification of Occupations (1976). The length of each of the job descriptions was approximately fifty words. Representative elements of nurse aid and hospital orderly descriptions were combined, as well as those for shop assistant, and spareparts salesperson, for the hospital aid and salesperson positions respectively.

3.4.2 Job Title

In order to test for the effect of gender linkage on job evaluaton ratings the gender of the four jobs was experimentally manipulated, by providing a male title or a female title for each of the job descriptions.

For hospital aid, the job titles were nurse aid (female) and orderly (male). For salesperson the titles were shop assistant (female) and spareparts salesperson (male). For police officer the titles were policewoman and policeman, and for principal, headmistress and headmaster.

3.4.3 Pay Level

In order to test for indirect bias, the pay level for each of the four jobs was also experimentally manipulated. For each job, one half of the descriptions reported a high salary, and the other half reported a low salary. For hospital aid, the salary was $15,000 (low) and $20,000 (high). For salesperson the salary was $14,000 (low) and $22,000 (high). For police officer the low and high pay rates were $32,000 and $45,000 respectively, and for principal position the pay rates were $35,000 (low) and $55,000 (high).

The manipulated pay rates were drawn and choosen based on the average rates of pay for these jobs reported in the New Zealand Census (1986).

However to obtain a more realistic value of the current pay for these jobs the census data was considered together with the 1989 Awards for each of the job descriptions with the exception of police officer. The non published awards for police officer, meant compensating the police officer's salary with a percentage increase similar to the rise of the three published positions.

On completion of designing the questionnaire for the main study, pilot II was conducted, and aimed at establishing that the pay stimuli provided were perceived appropriately as high versus low. The study also tested that the questionnaire and instructions were clearly understood, while establishing approximately how long the task took to complete.

Fifteen ski club members, representing a wide age group served as the subjects. The subjects were asked to complete the questionnaire, and on completion were instructed to indicate, using their understanding of current market rates, whether they considered the pay levels assigned in the exercise as high, medium or low. Finally, subjects were instructed to answer questions pertaining to the understanding and length of the questionnaire.

It was shown that eighty-four percent of the subjects in Pilot Two correctly identified the pay level when it was reflected as high, and eighty-nine of the subjects identified the low paid condition correctly. Thus the majority of subjects identified features which could be essential to the design.

3.4.4 Dependent Variables

The scores on three compensable factors (complexity of duties, education and experience) and a combined total score served as the dependent variables.

Definitions of the three factors, and factor levels were derived from the Midwest Industrial Management Association (MIMA) system (Treiman,1979). Degree levels for the three factors ranged from one through to five, and were based together with the MIMA (Treiman,1979) on the Hays Method (Burton, Hag and Thompson, 1987). Only three factors were included in the design of the exercise, in order to reduce the amount of time needed to complete the exercise and hence encourage participation. These three factors were chosen because they had been shown to account for 94% of the actual variance in total assigned points (Ash and Crnic, as reported in Treiman,1979). These factors have also been used more recently in similar research (Schwab and Grams, 1985; and Mount and Ellis, 1987).

The resulting questionnaire to be used in the main study consisted of five pages. Page One requested background information for the exercise, and contained questions for participants to answer pertaining to their gender, age and work experience in job evaluation. Page Two contained instructions telling participants how to proceed through the exercise. Definitions of the three compensable factors were included.

Subjects were instructed to rate the worth of four job descriptions, on three factors (complexity, education and experience) on a scale of one through to five.

Following the instructions, were pages three to six. Each page was headed with one of the four job descriptions; hospital aid, salesperson, police officer or principal, together with a corresponding salary. Following each job description were definitions of the three compensable factors, and their five subsequent levels. A copy of the questionnaire can be found in Appendix A.

3.5 PROCEDURE

As previously described, subjects were initially contacted by telephone, requesting their participation in the study. On agreeing to participate, each subject was posted the questionnaire. Each subject received a packet of materials, including a covering letter which encouraged participation, and explained the nature of the study. Subjects were instructed that the exercise would take approximately 10-15 minutes to complete and it was stressed that results were strictly anonymous.

Subjects read each job description, referred to the definitions of the factors and degree levels, and rated each job on the three factors from one through to five. Subjects were to record their evaluation in the box.

All subjects received four job descriptions. However, the title or job gender, and average pay level were experimentally varied, so that one half of the descriptions were assigned female-linked job titles, while the other half were assigned male-linked job titles. In addition, one half of the descriptions were reported as high paying, and the other half as low paying. The 60 male and 60 female subjects were randomly assigned to the four possible combinations. Effectively, as gender of the evaluator was also being tested, in total there were eight cells, each containing 15 subjects.

In sum, all subjects rated each of the four job descriptions, principal, police officer, salesperson and hospital aid. Each subject rated either all jobs with a masculine title or all jobs with a feminine title. Likewise, all jobs for each subject would be either high paying or low paying. The order of the occupations was randomised within the exercise. In each of the four conditions, the pages were arranged in four orders, and the jobs randomly presented.

An additional form, separate from the questionnaire requested that subjects indicate whether or not they would like a summary of the study's results. This form also enabled the author to determine who had completed the form, allowing those who had not returned the form to be contacted. This however was not necessary, as the forms were promptly returned.

A self addressed, postage paid return envelope was provided for this form, as well as for the return of the primary questionnaire. Finally, a summary of the results on completion of the study were sent to those who requested that they be made available. A copy of the participant's feedback can be found in Appendix B.

CHAPTER IV

RESULTS

The following chapter presents the results of the study. Section 4.1 outlines the procedure used to analyse the data. This is followed by a brief summary of the main results. Results for the four jobs; principal, police officer, salesperson and hospital are subsequently considered individually.

4.1 MAIN STUDY

The primary study was tested by 16 three-way analyses of variance altogether. A 2x2x2 (Job Title x Pay Level x Evaluator Gender) analysis of variance was performed for each of the four positions; (principal, police officer, salesperson and hospital aid), on each of the four dependent variables. These variables were complexity, education, experience, and the combined total score. Thus, each ANOVA assessed the effects of the manipulations and evaluator gender on the four dependent variables for each job.

It was argued by Schwab and Grams (1985) that because job evaluation systems are used to generate a hierarchial structure for jobs, then the issue at hand is whether manipulations affect the order in which jobs are placed. Therefore, the absolute evaluation score assigned to a particular job is not as important as how a job is located in a distribution of these evaluations. Such an analysis subsequently would require that jobs would become a within-subject factor, and thus a far more complicated repeated measures design. However, the author considered it more appropriate to examine the manipulations of each of the four jobs separately. This design was aimed to provide a clearer understanding, while focusing on the effects, the manipulations had on each job's score. A preliminary repeated measures analysis, involving in that case a four way ANOVA with a repeated measures on position job descriptions, also indicated that results were very similar to those produced by the separate ANOVA's. Results indicated that evaluator gender, and pay level influenced evaluation ratings. However the gender composition of a position did not affect evaluation judgements.

4.1.1 Summary of Results

Summarised, the results indicated that the pay level associated with a job, and the gender of the evaluator strongly influenced the ratings of the four positions, principal, police officer, hospital aid and salesperson. The gender composition of a position however did not affect evaluation ratings.

While pay level, and evaluator gender both produced a difference in the ratings for each of the four jobs, more importantly they interacted with one another to influence evaluation ratings. Title was also found to interact with evaluator gender on complexity and education for police officer, and on total, complexity, and education for salesperson. Finally, title interacted with pay on the complexity factor for the hospital aid position.

The subsequent section will present in more detail, the extent of each effect for the four individual jobs.

4.1.2 Individual Job Results

Principal

Results for the position of principal are presented in Table 1 and Table 2. Table 1 presents the mean job evaluation scores, while Table 2 depicts the results of four analyses of variance for total, complexity, education and experience.

Table 1. Mean Job Evaluation Scores (Title by Pay by Evaluator Gender): Principal

Job Title		Male Form				Female Form			
Pay Level		High		Low		High		Low	
Eval Gender		M	F	M	F	M	F	M	F
Factors									
Complexity	X	4.80	4.73	3.87	4.40	4.27	4.93	3.73	3.67
	S.D	0.41	0.59	0.92	0.74	0.59	0.26	0.80	0.90
Education	X	4.53	4.73	3.93	4.13	4.67	4.73	4.00	4.00
	S.D	0.52	0.46	0.88	0.64	0.46	0.46	0.76	0.54
Experience	X	4.53	4.53	3.73	3.87	4.07	4.80	4.07	3.73
	S.D	0.74	0.52	0.88	0.64	0.70	0.41	0.59	0.88
Total Score	X	13.87	14.00	11.53	12.40	13.00	14.47	11.80	11.4
	S.D	1.13	1.20	2.03	1.35	1.20	0.83	1.61	1.64

Results from the four analyses of variance indicated that evaluator gender influenced the complexity factor ($F(1,119)=4.53$, $p<.05$) and total score ($F(1,119)=3.99$, $p<.05$). However no statistically significant results were found for education nor for the experience factor. Examination of the means in Table 1 indicated that typically female subjects evaluated the position higher than the male subjects did.

Table 2. Principal Position: Results of Four Analyses of Variance for Total, Complexity, Education and Experience Factors

		TOTAL		COMPLEXITY		EDUCATION		EXPERIENCE	
Source	df	MS	F	MS	F	MS	F	MS	F
Gender	1	8.01	3.99*	2.13	4.53*	.41	1.09	.53	1.12
Title	1	2.41	1.20	2.70	5.73*	.01	.02	.00	.00
Pay	1	126.08	62.81***	17.63	37.40***	12.68	34.13***	12.03	25.27***
Gender by Title	1	.01	.00	.03	.07	.21	.56	.13	.28
Gender by Pay	1	2.41	1.20	.03	.07	.01	.02	1.63	3.43
Title by Pay	1	.21	.10	.53	1.13	.08	.20	.30	.63
Gender by Title by Pay	1	12.68	6.32*	3.3	7.07**	.01	.02	2.70	5.67*

p<.05 * p<.01 ** p<.001 ***

Secondly, results showed a strong significant effect for pay on the total score ($F(1,119)=62.81$, $p<.001$), complexity ($F(1,119)=37.40$, $p<.001$), education ($F(1,119)=34.13$, $p<.001$) experience ($F(1,119)=25.27$, $p<.001$) factors. The means provide evidence that, similarly with all four positions, scores assigned were greater in the high paid condition than they were in the low paid condition.

The only significant main effect for job title ($F(1,119)=5.73$, $p<.05$) was found on the complexity of duties factor, where the masculine title, headmaster was typically evaluated higher than the job titled headmistress. Finally no significant two way interactions were observed.

Results show a 2 x 2 x 2 (Evaluator Gender x Job Title x Pay Level) analysis of variance, performed on each factor, gave a significant interaction effect for complexity ($F(1,119)=7.07$, $p<.01$), experience ($F(1,119)=5.67$, $p<.05$) and the total factor score ($F(1,119)=6.32$, $p<.05$). Education however yielded no significant results.

Total score, complexity and experience received higher evaluations in the high paid condition, compared to the low paid condition. One exception to this pattern however, was where the title headmistress was evaluated identically by males in both the high and the low paying conditions on the experience factor.

In the high paid condition, for complexity, experience and total score, males evaluated jobs with the male title higher than jobs with the female title. In the low paying condition however, headmaster was evaluated higher than headmistress only on the complexity factor by males. In contrast, in the high paid condition, on complexity, education and total score, females evaluated the job titled headmistress higher than the job titled headmaster. In the low paying condition the opposite was true. That is, the masculine titled job was evaluated higher than the feminine one by females.

Overall then, generally when pay was high, each gender evaluated their own gender higher than did the opposite sex, but in low paying conditions each gender evaluated the job higher for the opposite sex. A similar trend was observed in the results for police officer and hospital aid. No statistically significant interaction however was observed for salesperson.

Police Officer

Table 3 presents the mean job evaluation scores on complexity, education and experience for police officer. The analyses of variance results for total, complexity, education and experience, for the position of police officer are presented in Table 4. The means indicated that with exception to three instances, males rated the position of police officer lower than females did, for total score ($F(1,119)=14.78$, $p<.001$), education ($F(1,119)=17.57$, $p<.001$), complexity ($F(1,119)=3.99$, $p<.05$) and experience ($F(1,119)=9.02$, $p<.01$).

Table 3. Mean Job Evaluation Scores (Title by Pay by Evaluator Gender) - Police Officer

Job Title		Male Form				Female Form			
Pay Level		High		Low		High		Low	
Eval Gender		M	F	M	F	M	F	M	F
Factors									
Complexity	X	3.73	3.60	2.40	2.53	2.87	3.93	2.40	2.53
	S.D	0.70	1.24	0.74	0.64	0.83	0.80	0.74	0.74
Education	X	3.07	3.47	2.13	2.13	2.80	3.87	2.20	2.87
	S.D	1.03	0.74	0.64	0.35	0.56	0.74	0.68	0.64
Experience	X	3.13	3.73	2.27	2.67	2.80	3.67	2.67	2.40
	S.D	0.92	0.88	0.46	0.50	0.94	0.82	0.62	0.51
Total Score	X	9.93	10.80	6.80	7.33	8.47	11.47	7.27	7.80
	S.D	2.31	2.48	0.94	0.98	1.81	2.03	1.39	1.42

Results for manipulated pay levels were consistent across total score ($F(1,119)=79.83$, $p<.001$), complexity ($F(1,119)=50.39$, $p<.001$), education ($F(1,119)=57.72$, $p<.001$) and experience ($F(1,119)=39.15$), $p<.001$). Jobs with a higher pay level received more points than jobs in the low paying condition. There was however no statistically significant difference between the ratings of the female title, policewoman, and the male title, policeman.

Table 4. Police Officer Position: Results of Four Analyses of Variance for Total, Complexity, Education and Experience Factors

		TOTAL		COMPLEXITY		EDUCATION		EXPERIENCE	
Source	df	MS	F	MS	F	MS	F	MS	F
Gender	1	45.63	14.78***	2.70	3.99*	8.53	17.57***	4.80	9.02**
Title	1	.03	.01	.53	.79	1.63	3.36	.13	.25
Pay	1	246.53	79.83***	34.13	50.39***	28.03	57.72***	20.83	39.15***
Gender by Title	1	8.53	2.76	2.70	3.99*	3.33	6.86**	.30	.56
Gender by Pay	1	14.70	4.76*	.83	1.23	1.20	2.47	3.33	6.26*
Title by Pay	1	5.63	1.82	.53	.79	.83	1.72	.53	1.00
Gender by Title by Pay	1	8.53	2.76	2.70	3.99*	.00	.00	1.63	3.07

p<.05 * p<.01 ** p<.001 ***

A significant two way interaction was observed for gender by pay, for the experience factor ($F(1,119)=6.26$, $p<.05$) and for total score ($F(1,119)=4.76$, $p<.05$). Examination of the means indicated that both males and females rated the job higher in the high paid condition than in the low paid condition, while females rated the job greater than males did in the high and low paying conditions, with one exception (in the low paid condition, male subjects rated the policewoman higher than that of the policeman).

Secondly, an interaction effect for gender by title was found on the education factor ($F(1,119)=6.86$, $p<.01$). Results showed that females typically rated the job higher than males did regardless of the title. However, males tended to rate policewoman lower than that of policeman, while females assigned more points to the position of policewoman than to that of the policeman.

A gender by title interaction effect was also found on the complexity factor ($F(1,119)=3.99$, $p<.05$). No distinct pattern was evident from examination of the means, and rather the interaction was considered by examining the three-way interaction for gender by title by pay ($F(1,119)=3.99$, $p<.05$). Again, jobs were evaluated less when low paid compared to when they were high paid. In the low paid condition, males evaluated policeman and policewoman exactly the same ($Xm=Xw=2.4$, S.D.=.74). While the female's ratings were higher ($Xm=2.53$, S.D.=.64, $Xw=2.53$, S.D.=.74) than the male's ratings, they were also consistent across both titles. In the high paid condition, males rated policeman higher than policewoman, while females rated policewoman higher than policeman.

Hospital Aid

Results of the analyses of variance for total, complexity, education and experience, for the hospital aid position are presented in Table 5.

Table 5. Mean Job Evaluation Scores (Title by Pay by Evaluator Gender): Hospital Aid

Job Title		Male Form				Female Form			
Pay Level		High		Low		High		Low	
Eval Gender		M	F	M	F	M	F	M	F
Factors									
Complexity	X	1.93	2,13	1.60	1.80	2.13	2.60	1.33	1.33
	S.D	0.80	0.74	0.63	0.68	0.52	0.74	0.62	0.50
Education	X	1.60	2.07	1.20	1.33	1.80	2.27	1.47	1.67
	S.D	0.83	0.96	0.41	0.50	0.68	0.59	0.92	0.98
Experience	X	1.87	2.00	1.33	1.67	1.73	2.60	1.53	1.53
	S.D	0.92	0.76	0.50	0.62	0.70	0.63	0.74	0.64
Total Score	X	5.40	6.20	4.13	4.80	5.67	7.47	4.33	4.53
	S.D	2.32	2.24	1.06	1.37	1.23	1.60	1.88	1.46

Table 6. Hospital Aid Position: Results of Four Analyses of Variance for Total, Complexity, Education and Experience Factors

		TOTAL		COMPLEXITY		EDUCATION		EXPERIENCE	
Source	df	MS	F	MS	F	MS	F	MS	F
Gender	1	22.53	7.78**	1.41	3.24	3.01	5.21	3.33	6.86**
Title	1	4.03	1.39	.01	.02	1.88	3.25	.53	1.10
Pay	1	90.13	31.13***	14.01	32.24***	8.01	13.87***	8.53	17.57***
Gender by Title	1	.53	.18	.01	.02	.01	.01	.30	.62
Gender by Pay	1	5.63	1.95	.41	.94	.68	1.17	.83	1.72
Title by Pay	1	4.80	1.66	3.68	8.46**	.08	.13	.30	.62
Gender by Title by Pay	1	4.03	1.39	.41	.94	.01	.01	2.13	4.39*

p<.05 * p<.01 ** p<.001 ***

Table 6 presents the mean job evaluation scores for the position. The position of hospital aid was rated higher by females than by males on total score ($F(1,119)=7.78$, $p<.01$), experience ($F(1,119)=6.86$, $p<.01$) and on education ($F(1,119)=5.21$, $p<.05$), with exception to where males and females evaluated the position identically, when it was low paid and titled as nurse aid. Ratings on the complexity factor were not significantly different.

No title effect was statistically significant, but pay level was significant for all variables, i.e on total ($F(1,119)=31.13$, $p<.001$), complexity ($F(1,119)=32.24$, $p<.001$) education ($F(1,119)=13.87$, $p<.001$) and on experience ($F(1,119)=17.57$, $p<.001$). The means indicated that when the position was associated with a high level of pay, it was rated higher than when it was low paid.

Pay level also interacted with job title on the complexity factor ($F(1,119)=8.46$, $p<.01$). Both titles in the high pay condition were assigned more points than titles in the low paying condition. However, when both titles were high paid, then nurse aid was evaluated higher than that of orderly. In contrast, when both titles were low paid, then the orderly position was evaluated above that of the nurse aid position.

The only three way statistically significant interaction among gender by title by pay was on the experience factor ($F(1,119)=4.39$, $p<.05$). Here jobs in the high paying condition were evaluated higher than in the low paying condition.

Females also generally, in both pay conditions, evaluated the jobs higher than males did. As with the position of principal and to a more limited extent with that of police officer a gender bias was evident. In the high paid condition, males rated the position of orderly higher than nurse aid, while females rated the nurse aid position higher than that of the orderly. In the low paid condition the opposite is true. Males rated the position nurse aid higher than that of the orderly, and females rated the position orderly higher than that of nurse aid.

Salesperson

Table 7 summarises the mean job evaluation scores on the total, complexity, education and experience factors, for the salesperson position. Table 7 differs from the three previous summary tables presented for principal, police officer and hospital aid. Whereas Table 1,3 and 5 were broken down to consider the three independent variables (job title, pay level and evaluator gender), Table 7 was only broken down by job title and evaluator gender. This was because there were no significant three-way interactions, and effectively pay level was collapsed into one group.

Table 7. Mean Job Evaluation Scores (Title by Evaluator Gender): Salesperson

Job Title		Male Form		Female Form	
Evaluator Gender		M	F	M	F
Factors					
Complexity	X	2.17	2.30	1.73	2.43
	S.D	0.87	0.70	0.74	0.73
Education	X	1.60	1.77	1.57	2.23
	S.D	0.77	0.86	0.63	0.73
Experience	X	1.60	1.73	1.47	1.93
	S.D	0.77	0.74	0.68	0.83
Total Score	X	5.37	5.80	4.77	6.60
	S.D	1.92	1.92	1.61	1.96

However,Table 8 presents the results of the four three way analyses of variance for the total, complexity, education and experience factors. Similarly as with the principal and police officer positions, the position salesperson was evaluated higher by females than by males, on total score ($F(1,119)=16.55$, $p<.001$), complexity ($F(1,119)=9.68$, $p<.01$), education ($F(1,119)=13.06$, $p<.001$), and experience ($F(1,119)=7.09$, $p<.01$).

Table 8. Salesperson Position: Results of Four Analyses of Variance for Total, Complexity, Education and Experience Factors

		TOTAL		COMPLEXITY		EDUCATION		EXPERIENCE	
Source	df	MS	F	MS	F	MS	F	MS	F
Gender	1	38.53	16.55***	5.21	9.68**	5.21	13.06***	2.70	7.09**
Title	1	.30	.13	.68	1.25	1.41	3.53	.03	.09
Pay	1	128.13	55.03***	5.21	9.68**	18.41	46.16***	22.53	59.15***
Gender by Title	1	14.70	6.31*	2.41	4.48*	1.86	4.70*	.83	2.19
Gender by Pay	1	6.53	2.81	.41	.76	1.41	3.53	.53	1.40
Title by Pay	1	.83	.36	1.41	2.62	.41	1.02	.13	.35
Gender by Title by Pay	1	4.03	1.73	.41	.76	.41	1.02	.53	1.40

p<.05 * p<.01 ** p<.001 ***

Jobs in the high paying condition were also evaluated higher than in the low paying condition for all factors on total score ($F(1,119)=55.03$, $p<.001$), complexity ($F(1,119)=9.68$, $p<.01$), education ($F(1,119)=46.16$, $p<.001$) and on experience ($F(1,119)=59.15$, $p<.001$). As with police officer, there were no statistically significant differences in ratings for the male and female titled jobs. No three way interactions were statistically significant, while two way interactions were observed for gender by title on total score ($F(1,119)=6.31$, $p<.05$), complexity ($F(1,119)=4.48$, $p<.05$) and on education ($F(1,19)=4.70$, $p<.05$). The same trend towards an interaction was observed for experience. However it was not statistically significant.

Females rated both titles higher than males did. However males rated spareparts salesperson ($X=5.37$, S.D.=1.92) higher than shop assistant ($X=4.77$, S.D.=1.61), while females rated the feminine title ($X=6.60$, S.D.=1.96) more highly than the masculine title ($X=5.80$, S.D.=1.92). The same pattern was observed for the complexity and education factors. These results are consistent with those for the position of police officer, where each gender evaluated their own gender higher, on education and complexity.

CHAPTER V

DISCUSSION

The first section of this chapter provides a brief discussion of the results. Section 5.2 offers possible explanations for the results, and in particular, how and why they differ from previous studies. The study's limitations; sampling, manipulations and external validity are then discussed. Finally, the chapter draws together the study's conclusions, within the context of the present New Zealand industrial relations scene.

In order to consider implementation of comparable worth or equal pay for work of equal value, a means of determining how diverse jobs can be compared with one another must be developed. Within this context, job evaluation is accorded an important role, where it serves as a measure of worth. However despite the apparent formality and objectivity of job evaluation, bias can enter into the evaluation process.

The present study investigated three potential sources of gender bias in job evaluation. These were direct bias, indirect bias and rater bias (Schwab and Grams, 1985). The first, direct bias occurs if predominantly female jobs are undervalued relative to predominantly male jobs as a function of gender per se. Secondly, indirect bias occurs if perceptions of job worth are influenced by the current pay levels associated with a job.

Finally, evaluator bias investigates whether the gender of the evaluator influences evaluation ratings.

5.1 DISCUSSION OF RESULTS

The results show that typically principal was evaluated the highest, followed by police officer, salesperson and hospital aid which scored the lowest. This was to be expected as the jobs clearly represent different hierarchial levels. The four jobs represented diverse activities, differing from one another in the type of tasks and skills. The results indicated that subjects differentiated betweeen the four jobs, and assigned job evaluation points discriminatively.

The order in which subjects typically rated the four positions was to be expected, and in fact reflected the approximate salary differences in reality. This is interesting, and indicates that despite the simplified nature of the points method used in this exercise, the rating procedure generated a ladder of jobs which accurately reflected the respective market rates for the four jobs.

The results of the present study were generally consistent with previous research with respect to job gender and the pay manipulations. However, results reported for gender of evaluator bias were markedly different from prior research.

The results of previous empirical studies in this area have provided mixed evidence regarding the three sources of bias in job evaluation. Consistent with previous research, results from the present study support the notion of indirect bias (Grams and Schwab, 1985; Schwab and Grams, 1985; Mount and Ellis, 1987 and Rynes et al, 1989). The study found strong evidence that knowledge of the pay level associated with a job influenced the allocation of points in the job evaluation process. Results showed, that when a position was perceived as high paying it was assigned higher job evaluation ratings than when it was perceived as low paying.

Research to date investigating direct bias has been less conclusive, although most studies have failed to find support for the notion (Arvey et al, 1977; Grams and Schwab, 1985; Schwab and Grams, 1985; McArthur and Obrant, 1986 and Rynes et al, 1989). Similarly, the present study found no main effect for job gender on factor or total scores, with one exception. A title effect was found for the principal's position on the complexity of duties factor, where headmaster was rated higher than headmistress. This indicates a pro-male bias, and is consistent with Carlisi's (1985) and Naughton's (1988) findings, while inconsistent with Mount and Ellis (1987) and Hornsby et al's study (1987), where evaluation ratings were higher in the female condition than in the male condition.

Mount and Ellis (1987) examined four jobs; nurse aid, orderly, YWCA director and YMCA director in a similar design to that used in the present study.

Hornsby et al (1987) investigated seven jobs in total. Four job descriptions with gender ambiguous titles; personnel officer, assistant director/recreation, dispatcher, and director/commission on aging were artificially labelled as male or female. In addition, two clearly gender-stereotyped jobs (clerk and mechanic) were included, together with the position, juvenile probation officer which was designated as gender neutral. Finally information describing the jobs used in the Carlisi (1985) and Naughton (1988) studies was not available.

Overall, the contributing effects of job gender appear to be slight and the results should be regarded as tentative. While only one effect was found for title, job gender interacted significantly with pay and evaluator gender in each position.

Finally, unlike most research to date, which has indicated that evaluator gender has little or no effect (Mount and Ellis, 1987; Schwab and Grams, 1985; Naughton, 1988; and Champion, 1987), the present study found a significant gender of evaluator effect. For principal, police officer, salesperson and hospital aid positions, female evaluators rated each job greater than males did on the total score, and typically on all three factors. This finding contrasts with Arvey et al's (1977) study, where female job analysts gave lower scores than male analysts, although it is consistent with Hornsby et al (1987), who found that female evaluators tended to evaluate a job slightly higher than did males.

However, regardless of the similarities or disimilarities, prior research on evaluator gender has reported less consistent significant results than those in the present study. Furthermore, the present study found two interesting interaction effects. A statistically significant two way interaction (gender by title), was found for the police officer and salesperson. The results indicated that, while for both positions, females assigned more points than males, both males and females rated their own gender higher.

An interesting pattern was also observed in a small number of three way interactions (gender by title by pay.) For principal and hospital aid, and to a more limited extent for police officer, males and females differed in their evaluation ratings depending on the pay level, and gender of a job. Results suggested that when males and females perceived a job as high paid, they assigned more value to their own gender performing the job. However, when a position is low paid the opposite is true, as males and females both valued the job greater for the opposite sex. No clear explanation can be offered for these interactions. However given that they are only specific to certain jobs, and that they are statistically significant on some factors, (typically, complexity and experience) the extent of their generalisability is limited.

5.2 EXPLANATION OF RESULTS

One possible explanation for the differences in the results between this and previous studies lies in the different sample populations, various studies have used.

The earlier studies by Grams and Schwab (1985) and Schwab and Grams (1985) used college raters and compensation practitioners respectively. However, these studies have been criticised for potentially not triggering sex stereotypes in the evaluation process. This relates to evidence from social psychological research, that raters rarely incorporate base rate information into a rating task (Mount and Ellis, 1989).

Alternatively, more recently, Mount and Ellis (1987) manipulated gender by use of titles, on a sample consisting of trained comparable worth participants. While Mount and Ellis's (1987) study was similar to the present study in terms of gender manipulation, the two sample populations were quite different. The fact that Mount and Ellis (1987) used subjects who had already received training from a comparable worth text, suggests that they may have been more aware of the importance of avoiding market pay rates in the evaluation of jobs, and therefore less susceptible to the influences of indirect bias.

In contrast, the present study used subjects who were less familiar with the details of the issue of comparable worth. As a result, it may be that the sample in this study were less aware of potential bias. This relates to Mount and Ellis's (1987) notion that "perhaps staff compensation specialists ... consciously or unconsciously seek to capture and systematically apply existing pay structure relationships as embedded in existing pay levels" (p.94).

Mount and Ellis (1987) suggest, that unlike the subjects in their study, real life personnel practitioners may be more influenced by pay levels, than subjects who had received focussed training in comparable worth.

The results of Rynes et al (1989), whose sample consisted of compensation practitioners, strongly indicated that market rates dominant decisions about job pay. Their study differs from the present one however, in that the dependent variable was job pay as opposed to job evaluation scores.

Furthermore, Mount and Ellis (1987) suggest that when pay information is embedded in jobs which are less familiar to evaluators, this may result in the pay level variable being a more salient cue. However, in the present study, no independent test was performed to assess the degree to which the subjects were familiar with the jobs. This is a limitation of this research. It seems probable though, that subjects were familiar with the jobs, given the public nature of aspect of the performance. However, assuming subject's previous knowledge of the jobs, and given the strong effect of pay, this study does not provide support for Mount and Ellis's (1987) suggestion.

While the results of this study were generally consistent with previous studies investigating pay bias, the effects observed were more consistent.

Results regarding direct bias were similar to those from previous studies (Arvey et al, 1977; Grams and Schwab, 1985; Schwab and Grams, 1985; McArthur and Obrant, 1986 and Rynes et al, 1989).

Most studies to date, investigating the influence of job gender on evaluations have found no support for the hypothesis, that stereotypical female jobs are evaluated less than stereotypical male jobs of comparable worth. However a few have indicated a small statistical effect, where predominantly female jobs may be undervalued compared to predominantly male jobs of comparable worth (Carlisi, 1985; Champion, 1987; and Naughton, 1988). By contrast, Mount and Ellis (1987) indicated a pro-female bias. Similarly as with pay, Mount and Ellis (1987) attribute their result to the fact that their sample consisted of individuals trained to be sensitive to gender bias.

The present study found no main effect for job gender, except for the principal's position on the complexity factor. The significant title effect is most clearly understood with respect to its interaction with pay and evaluator gender. The opposite trend was observed however, when a job was low paid. So while the present study indicated that the title; headmaster was evaluaated higher than headmistress, this changed when evaluator gender and pay level were also considered. Results showed, that when a job was associated with a high pay rate, than each gender attributed more value to their own gender performing the job.

Grams and Schwab (1985) suggested that certain compensable factors may be more susceptible to gender bias than others. However, the results of one significant interaction restrict any conclusions from this study. While there was little evidence that gender composition itself influenced job evaluations, it did interact with other variables.

Finally, the effects of evaluator gender in the present study, are unlike those typically found in previous studies. In contrast to research to date, where there has been little support for a gender effect, the present study found that evaluator gender significantly affected job evaluations. The results indicated that jobs scored higher when they were rated by females compared to when they were rated by males. Gender also interacted with pay and title. While some studies have found a gender effect (Arvey et al, 1977; McArthur and Obrant, 1986; Rynes et al, 1989; and Hornsby et al, 1988) these have all been less consistent than those in the present study. There is no obvious explanation for the effect of evaluator gender in the present study, and the extent of it was unexpected.

One possible explanation for the difference in results may stem from the manner in which job gender was manipulated. Grams and Schwab, (1985) and Schwab and Grams, (1985) manipulated job gender by way of base rates, by embedding information about the number of males and females performing the job in the job descriptions. This method however has been criticised in terms of external validity (Mount and Ellis, 1989). It is argued in fact, that information regarding incumbent gender is rarely included in job descriptions, and such experimental manipulations are not effective in triggering rater's gender stereotypes about jobs (Arvey, 1986). Mount and Ellis (1987) then manipulated job gender by use of gender specific titles, to produce a less artificial and more realistic method of denoting gender.

Despite procedural differences, Mount and Ellis (1987) did not consider evaluator gender in their study. It may be that the alternative manipulation of gender, more closely simulated the real world environment and effectively triggered differential rating behaviours in male and female evaluators. However, McArthur and Obrant (1986), Rynes et al (1989) and Hornsby et al (1987) designed similar manipulations, and tested if analyst gender had any significant effects. While evaluator gender did have an effect, the respective results were less significant than those in this study. Given the evidence then, the preceeding possible explanation should be treated with caution.

In summary, the present study found strong support for the existence of indirect bias, and a considerable main effect for evaluator gender. Little support however was found for the notion of direct bias, consistent with previous studies. However, job gender did interact with the various other independent variables, more so than appears to have been the case in prior research.

The present study strongly supports the assertion, that knowledge of current pay, influences evaluation judgements across jobs of diverse content. Schwab and Grams (1985) suggest that this would have comparable worth implications if female jobs were underpaid relative to male jobs. If current pay levels reflect past discrimination, and are in turn used as a basis in job evaluation, then effectively the new scores merely perpetuate biases and previous inequalities.

Secondly, the present study reported a strong evaluator gender effect, unlike most studies in this field. Arvey et al (1977) concluded in their study that where male and female raters give different evaluations, the findings could mean "that both male and female analysts might be necessary when carrying out job analysis procedures" (p. 415). However, research since 1980 has found that typically both males and females process sex-linked job information similarly (Hornsby et al, 1988). This was not the case in this study however, where males and females differed in their evaluations. While it is expected males and females would score similarly, this study indicated that males and females were less homogeneous in their evaluations. Finally consistent with previous research there was little support for direct bias.

A final explanation as to the present study's results may be in terms of the New Zealand legislative context and experience with job evaluation systems. The vast majority of the studies reviewed have been conducted in the U.S.A, where comparable worth legislation is by means of Title VII of the Civil Rights Act (1964). Since 1981, a number of cases concerning equal pay for work of equal value have been filed, and proceeded through the courts. Furthermore, it is evident that job evaluation's use is more widespread within the U.S.A, while a number of systems have only recently been introduced to New Zealand (State Services Commission, 1988). Job evaluation methods have typically been restricted in their use, to large public and private sector organisations in New Zealand.

During the last few years there has been a resurgence in an attempt to incorporate the principle of pay equity into New Zealand law. Particularly from 1988, with the preparation of the Towards Employment Equity report to 1990, with the introduction of the Employment Equity Act, (1990), the topic received increased awareness. However, the notion of comparable worth is still an undefined and new term to many people. Given then that it is not widely understood, together with what is for many people the relatively new associated concept of job evaluation, the New Zealand sample in this study may be less aware of gender biases operating in job evaluation systems, than a similar sample would be in the U.S.A.

The more pronounced effects observed in this study then, could be a reflection of the New Zealand legislative context and absence of any associated threat of litigation. This is clearly at best only a very tentative hypothesis. It would however be interesting to compare the present study's results with a follow up study, if and when the legislation has been operational for some years.

5.3 LIMITATIONS

5.3.1 Sampling

This study as it was implemented has several limitations. The sample size of 15 subjects per cell was small and limits the generalisability of this research.

However, the design of the study required that subjects be sub divided into eight cells, to test the various effects, and obtaining a larger sample was limited and difficult. In fact, this study represented a larger sample than has been employed in some previous research (Mount and Ellis, 1987; Schwab and Grams, 1985).

Another problem in this area of research, is the degree of variability that must be considered with respect to different sample characteristics. The present study used subjects from a wide range of organisations, who had experience in personnel and compensation. However, only little over half of the subjects had had experience with job evaluation procedures per se. This may possibly have influenced results, and it limits the generalisability, as does the fact that the sample was drawn exclusively from within the Christchurch metropolitan area.

It is unclear then, whether the sample can be considered as an accurate representation of people working in personnel management, in New Zealand. However, it is proposed that the sample represents a much more valid real world test in terms of age, and work experience than would have been the case with a student sample.

5.3.2 Manipulations

A second limitation of the study is the degree of authenticity of the manipulations.

The present study manipulated the gender of a job by way of job titles, which were selected on the basis of a pilot study. The pilot study established that nurse aid/shop assistant, and orderly/spareparts salesperson were perceived as feminine versus masculine respectively. Results pertaining to manipulation checks, together with the assumption, that the principal and police officer titles could be either male or female supports the notion that subjects correctly identified job gender. However, this says nothing about whether they responded to the information or not (Grams and Schwab, 1985).

Similar concerns surround the manipulation of pay rates. The procedure of embedding pay level information in the job descriptions lacks external validity, as pay is rarely presented in such a way. Therefore, pay may be a more salient cue than would typically be the case when jobs are evaluated in a real setting. This may account to some extent for the large pay effects in this study. Also, while the pay manipulations were based on census data, and award rates, it is difficult to know how much additional knowledge raters had about respective pay levels, and to what extent these may have affected results.

5.3.3 External Validity

Two final limitations of the study, concern external validity.

Whereas the job evaluation exercise, only presented subjects with a brief job description, in real-life situations, evaluators usually have greater access to more detailed information about a job. It may be then, that other sources of information are used in the job evaluation process. It has been proposed that raters with access to more information are more reliable in their evaluations (Hahn and Dipboye, 1988). The present study may then be less relevant to job evaluation practices in organisations, where more information about jobs is available.

Finally, "the simplified nature of the rating task is another area of concern in interpreting experimental results" (Mount and Ellis, 1989, p. 162). The present study was limited to investigating three factors; complexity, education and experience. These were previously used by Mount and Ellis, (1987); Schwab and Grams, (1985) and Grams and Schwab, (1985), and it was argued that the three accounted for considerable variance in total points scores. The use of three factors, also reduced the time needed to complete the exercise, aimed to encourage participation.

While previous studies provide support for the notion that reliability can be maintained with a reduction in scales (Chesler, 1948; Lawshe, 1945; Lawshe and Wilson, 1946; Lawshe and Farbo, 1949; Treiman, 1979 and Madigan, 1983) more sophisticated and complex systems with a greater number of factors are more likely to be used in real-life situations.

Secondly, it is common practice for job evaluation decisions to be made by more than one evaluator. This study is also limited then, in that only individuals rated the jobs. Doverspike et al (1983), however, found that reducing the number of raters had a negligible effect on reliability. Furthermore, Schwab and Heneman (1986), found, (using group consensus), a high intergroup reliability, and little difference in between-group ratings. In general however, there is very little research comparing the job evaluation ratings of individuals and groups. The dynamics of group decision making in job evaluation therefore is an area worthy of further research.

5.4 CONCLUSION

Despite its limitations, this study did demonstrate significant results. It reinforced recent trends in the literature which have studied potential gender biases in job evaluation, with one general exception. Results for evaluator gender were markedly stronger in the present study, while overall results were more prevalent than in previous research. Various explanations have been offered for these discrepencies with prior research.

Results provided limited support for the notion that the job evaluation process is affected by the gender composition of the job performers. Although the absence of significant effects for job gender is encouraging, it should be recognized that the possibility of indirect discrimination remains.

To the extent that the results generalise, the present study confirms the notion that current pay seems to influence job evaluation ratings. Finally, the gender of the job evaluator influenced results in the present study. This is an interesting result, given that previous research typically contradicts such a finding. This finding therefore, should be treated with caution, in the absence of further confirmation.

"The term 'comparable worth' refers to a theory, which identifies discrimination ... and to a compensation policy, designed to reduce or eliminate pay disparities" (Taylor, 1989, p. 23). The underlying premise is that jobs of dissimilar content, but equal in terms of worth should receive equal pay regardless of who performs the jobs. Some form of job evaluation then provides the mechanism to implement the theory of comparable worth or pay equity. However, debate about the issue revolves around questions concerning the necessity, feasibility and operation of such a policy, and in New Zealand it has taken on a political dimension.

Last year, on the 15th of July 1990, the Employment Equity Act was passed, and this porvided a legislative framework to address the issue of equal pay for work of equal value. However, its political life was to prove ephemeral. Following the October 1990 election, the incoming National Government introduced legislation to repeal the Employment Equity Act (1990). Therefore, despite the initiatives of the previous Government, of women's groups and working parties, legislation pertaining directly to equal pay for work of equal value has been is once again a goal rather than a reality.

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APPENDIX A

JOB EVALUATION EXERCISE

This study, as part of a Masters thesis, is being conducted by Emma Cullen at the University of Canterbury. It is concerned with the relative worth of different occupations.

BACKGROUND

Last year, on November 8, 1989, the Government confirmed its intention to legislate, and provide a framework within which the notion of pay equity could be addressed. Pay equity refers to equal pay for work of equal value.

Within this context, the need arises, to establish the relative worth of occupations. This then introduces the notion of job evaluation. The term job evaluation refers to a systematic method of determining the relative worth of jobs, on the basis of job dimensions.
The Employment Equity Bill, introduced to Parliament late last year, became law on 18 July 1990.

The purpose of this exercise is to investigate factors that influence individuals' judgements in job evaluation.

Please indicate your sex and age by circling the appropriate group.

SEX: MALE FEMALE

AGE: 20-30 years 31-40 years 41-50 years 51-60 years 61-70 years

Have you had any experience with job evaluation. Yes ☐
No ☐

If you answered yes, then with what form

Ranking Method ☐
Point Method ☐
Classification Method ☐
Factor Comparison ☐

There are no right or wrong answers, and results are strictly anonymous.
Thank you for your participation in this exercise.

INSTRUCTIONS

This exercise is aimed at establishing the relative worth of two occupations based on three factors. These factors are **education, experience,** and **complexity of duties.**

Education, describes the extent to which general or vocational training is necessary to perform a job in a satisfactory manner.

Experience, is the amount of practical experience, or on the job training required to perform a job effectively.

Complexity of duties, measures the choice of action required in applying methods, or procedures to complete a task.

On the following pages are four occupations, and a brief job description of each

Your task is to rate the worth of the four jobs under these headings on a scale of one through to five.

1) Please read each job description.

2) Then for each of the three dimensions - experience, education and complexity of duties , choose which of the five levels you think is necessary to perform that job.

3) Print the number of the level you choose in the box.

Nurse Aid (or Orderly)

Performs simple tasks to assist nursing personnel in a hospital, or other institution providing medical care. Prepares patients for examination or treatment. Baths, dresses and assists patients. Lifts patient and transports. May take temperature, pulse and respiration rates. Performs first aid duties. Sets up equipment.
Salary approximately $20,000/annum (or $15,000/annum).

Complexity of Duties **the choice of action required in applying methods, or procedures to complete a task**

(1) Strict Routine. Thinking within detailed rules, instructions.
(2) Semi Routined. Job requires working within well defined procedures
(3) Clearly defined. Job requires adapting methods or procedures.
(4) Broadly defined. Thinking within broad policies and objectives.
(5) Generally defined. Job requires development of concepts and policies.

Education **the extent to which general or vocational training is necessary to perform a job.**

(1) Primary plus some secondary education.
(2) Completion of senior highschool years, e.g. Sixth and/or seventh form.
(3) Complete senior highschool years, plus two years additional education.
(4) University Graduation or equivalent. Bachelors level.
(5) Advanced Specialised Education, e.g. Post graduate training.

Training or Experience **is the amount of practical experience required to perform a job effectively.**

(1) Up to and including three months.
(2) Over three months, and up to and including one year.
(3) Over one year, and up to and including three years.
(4) Over three years, and up to and including eight years.
(5) Over eight years.

Shop Assistant (or Spareparts Salesperson)

Sells goods in a retail establishment or from an agency. Ascertains nature of product required, assists customer in choice by demonstrating and describing characteristics of products. May select goods for customer according to written/telephoned requests. Packs and arranges delivery. May receive payment, arrange credit or be involved in exchange. Salary approximately $22,000 (or $14,000/annum).

Complexity of Duties **the choice of action required in applying methods, or procedures to complete a task**

(1) Strict Routine. Thinking within detailed rules, instructions.
(2) Semi Routined. Job requires working within well defined procedures
(3) Clearly defined. Job requires adapting methods or procedures.
(4) Broadly defined. Thinking within broad policies and objectives.
(5) Generally defined. Job requires development of concepts and policies.

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(5) Over eight years.

Policewoman(or Policeman)

Maintains law and order, protects persons and property from hazards and unlawful acts and arrests persons for contraventions of the law. Prevents and solves crimes. Enforces laws and regulations. Patrols assigned areas, maintaining order. Provides infomation and keeps records. Makes reports and gives evidence in courts. Salary approximately $ 45,000 (or $32,000/annum).

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Training or Experience **is the amount of practical experience required to perform a job effectively.**

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(3) Over one year, and up to and including three years.
(4) Over three years, and up to and including eight years.
(5) Over eight years.

Headmistress (or Headmaster)

Plans, organises and co-ordinates educational curriculum, teaching staff, and other services in a school. Determines educational programmes. Directs administrative/clerical activities concerning pupil admissions, supplies, and equipment. Establishes/maintains relationship with other education, health, welfare and employment services. Maintains discipline. Liases with teachers/parents and pupils. Salary approximately $55,000 (or $35,000/annum)

Complexity of Duties **the choice of action required in applying methods, or procedures to complete a task**

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(3) Clearly defined. Job requires adapting methods or procedures.
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APPENDIX B

Letter to debrief the subjects

Dear Participant (personally addressed)

Last year, in September, you kindly completed a job evaluation exercise, for the purposes of my research as part of my Masters of Science Degree at the University of Canterbury. I have recently completed my study, and enclose a summary of the results, which you indicated an interest in.

The study was primarily interested in investigating how people value occupations and particularly with respect to gender. Specifically, it has been previously proposed, that job evaluation outcomes may serve to disadvantage individuals in jobs that are predominantly performed by females. The study you participated in considered three ways in which gender may affect job evaluation ratings. The first, termed *direct bias,* occurs if jobs held predominantly by females are undervalued compared to predominantly male jobs of similar content. Secondly, *indirect bias* occurs if perceptions of job worth are influenced by the pay rate associated with a job. Finally, the study tested if men and women valued jobs differently or not.

The study was designed, so that each subject rated four job descriptions; principal, police officer, salesperson and hospital aid. However, the gender of the four jobs was experimentally manipulated by providing a male title or a female title, while the job descriptions remained identical. For principal, the job titles were headmaster and headmistress. For police officer, the titles were policeman and policewoman. For salesperson, the titles were shop assistant (female) and spareparts salesperson (male). Finally, for hospital aid, the titles were nurse aid (female) and orderly (male). Similarly, job desriptions were provided with a high pay rate or a low pay rate. For principal, $35,000 or $55,000 per annum, for police officer, $32,000 or $45,000 per annum, for salesperson, $14,000 or $22,000 and for hospital aid, $15,000 or $20,000 per annum.

Subjects then received one of four possible combinations, a male titled job with high or low pay or a female titled job with high or low pay. This allowed for direct and indirect bias to be tested for. Finally the gender of the rater was tested for.

Results provided little support for the first type of bias. This meant that regardless of whether a job was perceived as male or female, job evaluation ratings were similar. On the other hand, the study did provide support for indirect bias. It was found that when a job was perceived as high paying, then it was assigned more value than when it was perceived as low paying, although the task was the same. Finally results indicated that men and women valued jobs differently.

While both men and women typically valued principal the highest, followed by police officer, salesperson and hospital aid, overall women valued all four jobs higher than men did.

With respect to direct and indirect bias, results of the study were consistent with research done overseas. However, it is interesting to note, that very few overseas studies have found such a large difference in ratings between men and women as found in this study. No obvious explanation is offered for this finding, because in the absence of further confirmation, any conclusions are only speculative.

In summary, it was concluded that to some degree it appears that gender bias does influence the way people value jobs. The implication of this, is that where job evaluation is used to value jobs, and particularly with respect to addressing legislative issues, a recognition of potential gender biases is required.

Once again, thank you for your participation in the exercise, and for asssiting me in this project.

Yours sincerely

Emma Cullen